

Appendix I

Traffic Study

002297

JAMES A. MUSICK FACILITY EXPANSION

TRAFFIC ANALYSIS

AUGUST 1996

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INTRODUCTION

This report presents the results of a traffic analysis performed for the proposed expansion of the James A. Musick Jail Facility and development of an Intermediate Care Facility and Sheriff's Station in unincorporated Orange County. This report has been prepared for inclusion in the Environmental Impact Report (EIR) being prepared for the proposed project.

PROPOSED PROJECT

The proposed project site is located southeast of the future extension of Alton Parkway and northwest of Bake Parkway and east of Irvine Boulevard as shown in Figure I-1. It is in unincorporated Orange County, adjacent to the City of Irvine and the City of Lake Forest.

The existing jail facility currently houses approximately 1,250 minimum security inmates. Access to the jail is provided by a single entrance off Irvine Boulevard at Musick Honor Farm Road, just south of the intersection between Irvine Boulevard and Alton Parkway.

The proposed project consists of expansion of the existing jail facility to 7,580 inmates, and construction of a 20,000 square foot Sheriff's Station and a 40-bed Intermediate Care Facility (ICF). The expanded jail facility will house male and female minimum, medium, and maximum security inmates. Access to the jail facility will be from a new entrance off of Alton Parkway, although deliveries will continue to be made at the existing entrance. The Sheriff's Station will provide law enforcement services for the Cities of Lake Forest and Mission Viejo and the unincorporated communities of Foothill Ranch, Portola Hills, Rancho Santa Margarita, Trabuco Canyon, Robinson Ranch, Rancho Cielo, Coto de Caza, Dove Canyon, and Las Flores. (Law enforcement services to be deployed from the new facility are currently being provided out of temporary facilities in Aliso

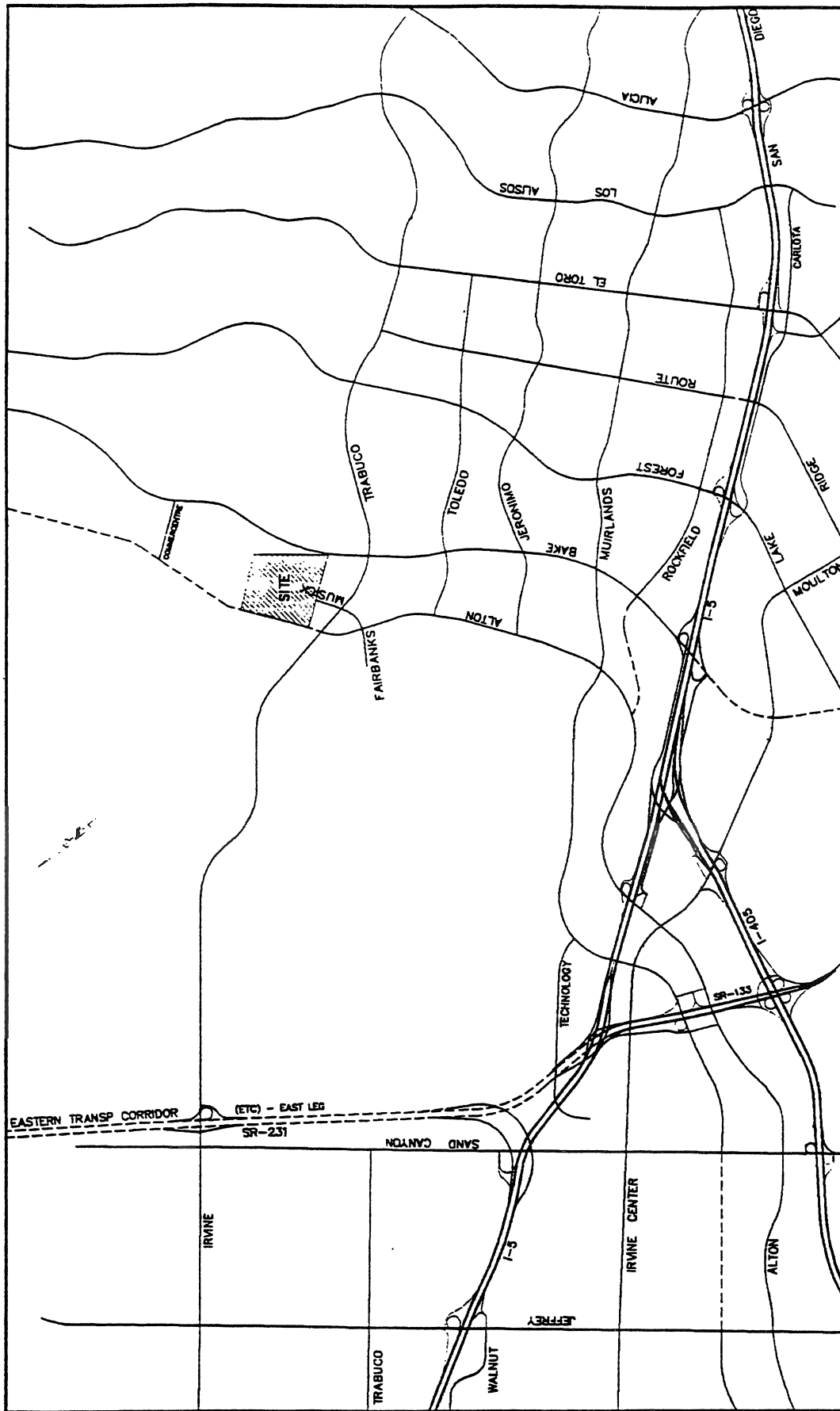


Figure I-1
PROJECT LOCATION

LEGEND
 — Existing roadway
 - - - Future roadway

Viejo.) The ICF is a home for emotionally and psychiatrically unstable youths who cannot be placed in foster/group homes or in Juvenile Hall, and is a detention facility where residents are confined. The home is operated by the Orange County Mental Health Board and will be relocated to this site from the Manchester Complex in Orange. Access to the Sheriff's Station and ICF will be provided from Bake Parkway.

The project is proposed to be developed in three complexes. Complex 1 will consist of an increase of approximately 865 inmates at the jail facility and relocation of the Sheriff Station and ICF. Complex 2 will increase the jail population by approximately 1,625 inmates, and Complex 3 adds 3,840 inmates.

ANALYSIS SCOPE

The purpose of this analysis is to identify the traffic impacts associated with the Musick Facility Expansion, and to recommend mitigation measures that could provide adequate levels of service on the surrounding circulation system. Impacts of the proposed development plan were identified by analyzing interim year and long-range traffic conditions for roadways and intersections within a defined traffic analysis study area (see discussion later in this chapter). The analysis examines average daily traffic (ADT) on the roadway system as well as peak hour impacts at major intersections throughout the study area.

The interim year used in the analysis represents a time frame that is around five to seven years in the future consistent with the Congestion Management Program/Measure M Program, and the long-range is based on the year 2020. The interim year impact analysis assumes buildout of the entire project (Complexes 1, 2 and 3) in the next five to seven years, even though actual construction may extend over a shorter or longer period of time. This assumption results in a worst case scenario for traffic impact purposes.

The traffic analysis material presented in this report is set out as follows:

Chapter II - Transportation Setting
Chapter III - Project Description
Chapter IV - Impact Analysis

Recommended mitigation measures for project impacts are also contained in Chapter IV. Supporting quantitative data can be found in Appendix A of this report.

STUDY AREA

A study area was defined for this analysis based on the impact of the proposed project on the surrounding street system. This is illustrated in Figure I-2 and includes roadway segments which have more than a 1,000 ADT increase due to the proposed project. Within this study area, peak hour intersection analyses are carried out for those locations where the intersection capacity utilization is increased by more than one percent.

As can be seen, the study area generally extends from Sand Canyon Avenue to the west, the I-5 Freeway to the south and El Toro Road to the east. It includes portions of the Cities of Irvine and Lake Forest and unincorporated Orange County.

METHODOLOGY

Traffic forecast data used for this analysis of the proposed Musick facility expansion was derived from several sources. The principal resource was the El Toro Sub-Area Model (ETSAM), a traffic model developed for use in the analysis of the reuse of the El Toro MCAS Base. The ETSAM is a direct derivative of the Orange County Transportation Analysis Model (OCTAM 2.7), and is designed to forecast long-range average daily traffic (ADT) volumes on the highway system (freeways and arterials) in the area of Orange County surrounding the El Toro site. The methodology utilized in this analysis is consistent with OCP-92 as required by the Congestion Management Program/Measure M Program.

To develop long-range peak hour intersection volume forecasts, data was utilized from other sources such as the South County Sub-Area Model (SCSAM), a traffic model developed for various applications in south Orange County including the Foothill Transportation Corridor southern segment. The long-range forecasts applied in this study are hence comprised of ETSAM ADT forecasts and peak hour intersection forecasts from other sources which have been adjusted to correlate with the ETSAM ADT projections.

Since the ETSAM does not currently have the capability to produce short-range (interim year) traffic forecasts, the interim year forecasts applied in this study were developed from comparative data from other sources, principally SCSAM. The procedure involved determining interpolation factors representative of the traffic growth indicated by the interim year and long-range time frames. These interpolation factors were then applied to the long-range peak hour and ADT forecasts that were prepared as previously described, and existing observed traffic counts.

PERFORMANCE CRITERIA

Identification of project impacts is based on specified performance criteria which evaluate the operating condition of roadways within the study area. The performance criteria include an arterial link analysis component and an intersection capacity utilization (ICU) analysis component as indicated in Table I-1. The arterial link analysis component involves the use of V/C ratios based on ADT volumes, while the ICU analysis component is based on AM and PM peak hour intersection turn volumes. The ADT capacities used by the City of Irvine are slightly different from those used by the County of Orange and the City of Lake Forest. For this analysis, City of Irvine capacities are applied for roadways within Irvine City limits, and Lake Forest/Orange County capacities are applied in those respective jurisdictions.

The purpose of the performance criteria is to specify target levels of service on the arterial highway system. Traffic levels of service are designated "A" through "F", with level of service (LOS) "A" representing free flow conditions and LOS "F" representing severe traffic congestion (see Table I-2 for a description of the various levels of service). Specific LOS standards have been established to serve both as a guideline for evaluating observed traffic conditions and as a target or goal when evaluating future development plans and circulation system modifications. At the regional planning level, the statewide Congestion Management Program (CMP) specifies LOS "E" (V/C ratio or ICU value less than or equal to 1.00) as the operating standard for roadways and intersections on the CMP highway system. At the County and local level, the Orange County Growth Management Program (GMP) has established LOS "D" (V/C ratio or ICU value less than or equal to .90) as the target level of service for the roadway system. There currently are no "deficient intersections" as defined in the GMP guidelines located in the study area.

Table I-1

TRAFFIC ANALYSIS PERFORMANCE CRITERIA

I. ADT ARTERIAL LINK VOLUMES

Level of Service to be determined based on average daily traffic (ADT) volume-to-capacity (V/C) ratios using the following ADT capacities:

CITY OF IRVINE

Major Arterial	8 lane	72,000
	6 lane (augmented)	65,000
	6 lane	54,000
Primary Arterial	4 lane (augmented)	42,000
	4 lane	32,000
Secondary Arterial	4 lane	28,000
Commuter	2 lane	13,000

COUNTY OF ORANGE/CITY OF LAKE FOREST

Principal Arterial	8 lane divided	75,000
Major Arterial	6 lane divided (augmented)	67,600
	6 lane divided	56,300
Primary Arterial	4 lane divided (augmented)	45,000
	4 lane divided	37,500
Secondary Arterial	4 lane undivided (augmented)	30,000
	4 lane undivided	25,000
Collector	2 lane undivided	12,500

PERFORMANCE STANDARDS:

Non-CMP roadways - Level of Service D (ADT V/C less than or equal to .90)

CMP highways - Level of Service E (ADT V/C less than or equal to 1.00)

II. PEAK HOUR INTERSECTION CAPACITY UTILIZATION (ICU)

Level of service to be based on peak hour ICU values calculated using the following assumptions:

Saturation Flow Rate: 1,700 vehicles/hour/lane

Clearance Interval: .05

Right-Turn-On-Red Allowed: Yes*

Right-Turn Adjustment Factor: .75

* "De-facto" right-turn lane is used in the ICU calculation if 19 feet from edge to outside of thru-lane exists and parking is prohibited during peak periods.

PERFORMANCE STANDARDS:

Non-CMP intersections - Level of Service D (peak hour ICU less than or equal to .90)

CMP intersections - Level of Service E (peak hour ICU less than or equal to 1.00)

III. MITIGATION REQUIREMENT

For V/C or ICU greater than the acceptable level of service, mitigation of the project contribution is required to bring intersection back to acceptable level of service or to no-project conditions if project contribution is greater than .03 at CMP locations and greater than .01 at all other locations.

Table I-2

PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

LEVEL OF SERVICE	TRAFFIC FLOW QUALITY	V/C VALUE
I. VOLUME/CAPACITY RELATIONSHIPS⁽¹⁾		
A	Low volumes; high speeds; speed not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.	0 - .60
B	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	.61 - .70
C	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods; recommended ideal design standards.	.71 - .80
D	Tolerable operating speeds; 31 to 70 percent of the signal cycle have one or more vehicles which wait through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.	.81 - .90
E	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	.91 - 1.00
F	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume which occurs at Level of Service "E."	Above 1.00

II. INTERSECTION DELAY RELATIONSHIPS⁽²⁾

- | | |
|---|---|
| A | Low delay (less than 5.0 seconds per vehicle). Occurs when progression is extremely favorable, and most vehicles arrive during the green phase and do not stop at all. |
| B | Delay in the range of 5 to 15 seconds per vehicle. Generally occurs with good progression and/or short cycle lengths. |
| C | Delay in the range of 15 to 25 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping. |
| D | Delay in the range of 25 to 40 seconds per vehicle, and the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E | Delay in the range of 40 to 60 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. |
| F | Delay in excess of 60 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay levels. |

Sources: ⁽¹⁾Highway Capacity Manual, Highway Research Board Special Report 87, National Academy of Sciences, 1965.
⁽²⁾Highway Capacity Manual, Transportation Research Board Special Report 209, National Research Council, 1985.

The potential for ADT link deficiencies based on V/C ratios to translate into actual capacity deficiencies is evaluated in this study by examining the peak hour intersection operation at the end or ends of roadway segments. A given link deficiency is considered theoretical rather than actual if the intersections at the ends of the link operate at acceptable levels.

The performance criteria also establishes the thresholds for requiring mitigation measures to address project impacts at individual roadways and intersections. Consistent with City and County traffic study guidelines for locations where the LOS performance standard is not maintained and the project contribution to the ADT V/C ratio or the peak hour ICU value is greater than .01, mitigation of the project contribution is required to bring the location back to an acceptable LOS or to the LOS under no-project traffic conditions.

RELATIONSHIP TO EL TORO COMMUNITY REUSE PLAN STUDY

The County of Orange is currently preparing a Community Reuse Plan for the El Toro MCAS. The EIR being circulated for the Reuse Plan contains several alternatives with respect to future land uses on the Base, plus accompanying transportation improvement strategies to serve the additional traffic. It can be anticipated that trip generation will be significantly higher than the current military use, and the proposed new roadways and additional mitigation measures will provide additional capacity for the increase in traffic.

The El Toro Community Reuse Plan Study has been carried out at a General Plan level of detail, providing information to aid in the selection of a Reuse Plan. At a later stage, more detailed studies will be undertaken which will provide information on future traffic and associated traffic improvements at a finer level of detail, comparable to that used here to address the Musick Facility expansion. Hence, at this time, background traffic assumptions used here do not incorporate a Reuse Plan for El Toro, and are based on the no-project scenario in the Reuse EIR. At the time a Reuse Plan is defined and the more detailed studies are carried out, those studies will use information which includes actions taken on the proposed Musick Facility expansion. It is expected that a Reuse Plan will be adopted by the Board of Supervisors by December 15, 1996. Since the Musick Jail project and EIR are expected to be considered prior to that date, this analysis is based on the existing

baseline conditions at MCAS El Toro. The El Toro Reuse Plan EIR describes the impacts of the Reuse Plan and the Musick Jail project.

DEFINITIONS

Certain terms and abbreviations used throughout this report are defined below to clarify their intended meanings:

ADT	Average Daily Traffic.
ICU	Intersection Capacity Utilization. A factor used to measure the volume/capacity ratio for an intersection and to determine its level of service.
LOS	Level of Service. A scale used to evaluate circulation system performance based on volume/capacity ratios of arterial segments or intersection ICU values. The levels range from "A" to "F," with LOS "A" representing free flow traffic and LOS "F" representing severe traffic congestion.
PEAK HOUR	This generally refers to the hour during the AM peak period (typically 7-9 AM) or the PM peak period (typically 3-6 PM) in which the greatest number of vehicle trips are generated by a given land use or are travelling on a given roadway.
VPD	Vehicles Per Day. This has the same meaning as ADT, but is generally used in a trip generation context rather than in reference to the highway volume of an arterial segment.
V/C	Volume-to-Capacity Ratio. This is typically described as a percentage of capacity utilized by existing or projected traffic on a segment of arterial or an intersection turn movement.

II

TRANSPORTATION SETTING

This chapter describes the transportation setting for the proposed project. The existing circulation system and prevailing levels of service are first discussed followed by a description of the future circulation system in the study area.

EXISTING HIGHWAY NETWORK

Primary access to the project site will be provided by the future extension of Alton Parkway northeast of Irvine Boulevard, Irvine Boulevard, and Bake Parkway. Alton Parkway is currently built as a six-lane major arterial generally running parallel to Bake Parkway to its northerly termination point at Trabuco Road. Irvine Boulevard is a six-lane major arterial which becomes Trabuco Road south of Bake Parkway. Bake Parkway is a major arterial west of Irvine Boulevard and a primary arterial east of Irvine Boulevard.

Regional access to the project vicinity is provided by the Santa Ana Freeway (I-5) and the San Diego Freeway (I-405). The project site is also currently served by the Foothill Transportation Corridor (SR-241) which is operated as a toll facility, and is located just northeast of the study area.

Figure II-1 illustrates the average daily traffic (ADT) volumes on the existing circulation system in the study area. Adjacent to the project site, Irvine Boulevard carries 30,000 ADT and Bake Parkway carries 22,000 ADT. Alton Parkway, the principal route to the freeway for site generated traffic ranges from 14,000 ADT at Irvine Boulevard to 53,000 near I-5.

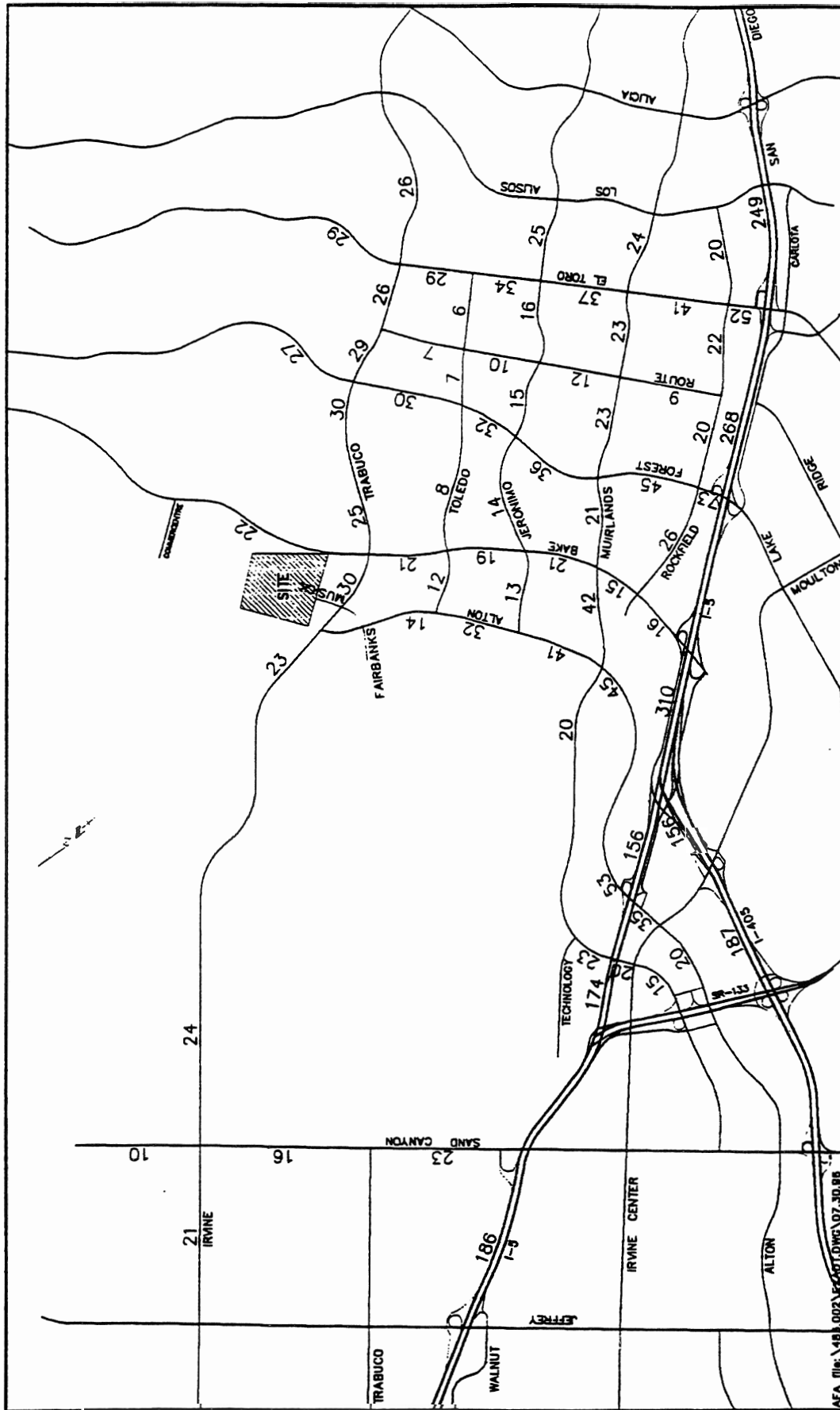


Figure II-1
EXISTING ADT VOLUMES

Existing AM and PM peak hour intersection turn volumes at key intersections were counted in 1996. The resulting intersection capacity utilization (ICU) values and levels of service are presented in Table II-1 (see intersection location diagram in Figure II-2).

The intersection capacity utilization (ICU) values are a means of representing peak hour volume/capacity ratios, with a value of .90 representing the upper threshold for level of service (LOS) "D". As the table indicates, all signalized study intersections currently operate at LOS "D" or better during the AM and PM peak hours, with the exceptions of Bake Parkway and Irvine Boulevard/Trabuco Road during the PM peak hour and Bake Parkway and Jeronimo Avenue during the AM peak hour.

FUTURE HIGHWAY NETWORK

The future highway network used in this analysis assumes various improvements to the existing system. For the long-range, these are based on the Orange County Master Plan of Arterial Highways (MPAH) illustrated in Figure II-3. The interim year analysis assumes circulation improvements that are anticipated to be implemented over the next five years.

Table II-2 summarizes the interim year and long-range improvements assumed for the study area circulation system. Interim year improvements include extension of Alton Parkway east of Irvine Boulevard, extension of Bake Parkway west of the San Diego Freeway (I-5) to Irvine Center Drive, construction of the east leg of the Eastern Transportation Corridor (SR-231) toll facility east of Irvine Boulevard, and widening of Bake Parkway north of the I-5 Freeway, El Toro Road, and Irvine Boulevard west of Alton Parkway to their full master plan widths.

Long-range circulation improvements in the study area consist of the extension of Rockfield Avenue to Alton Parkway.

The intersections identified in the previous section as currently operating at an unacceptable level of service will operate at acceptable levels of service under both the interim year and long-range conditions as a result of the intersection improvements summarized in this section.

Table II-1

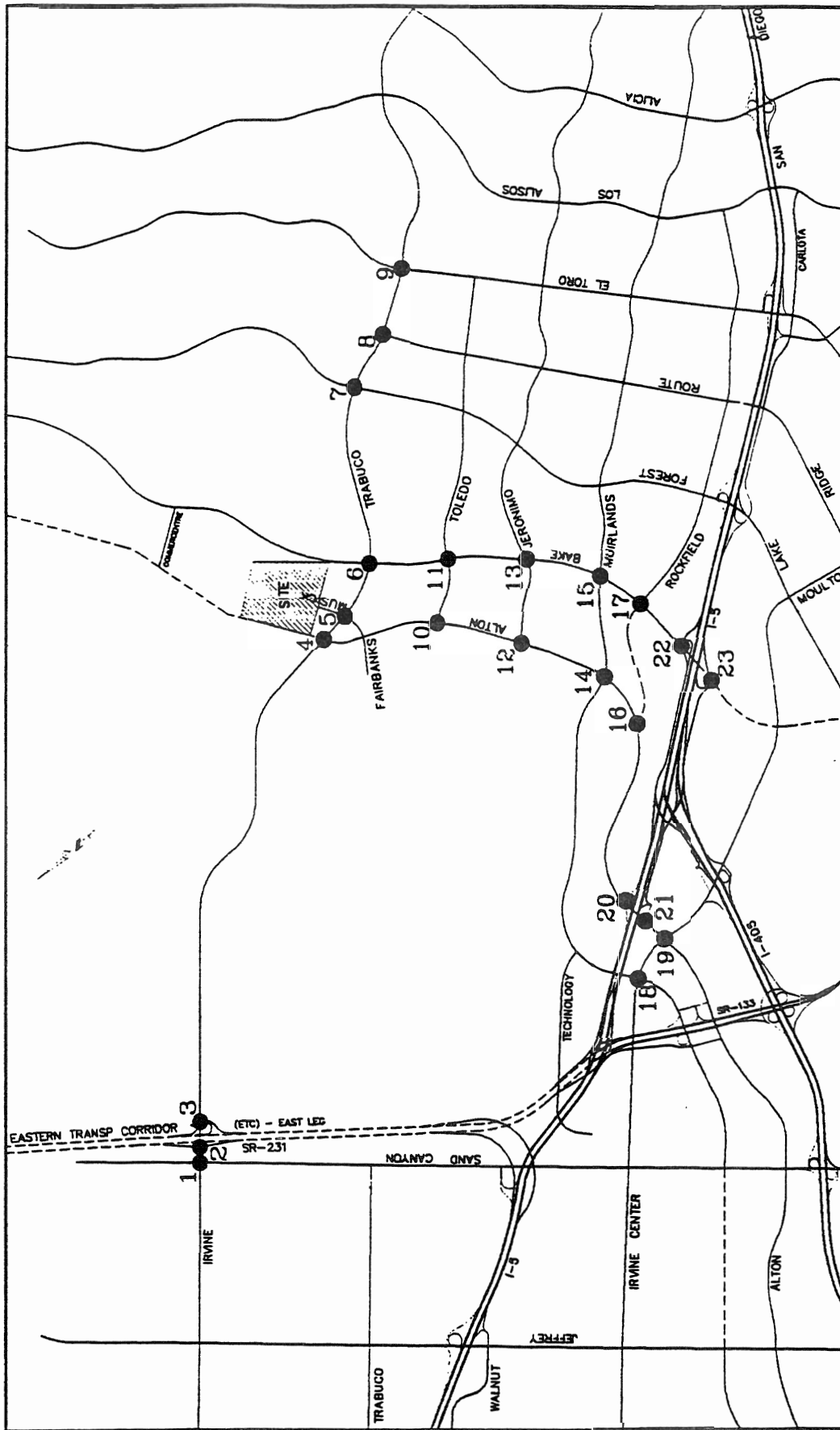
EXISTING ICU SUMMARY

INTERSECTION	EXISTING	
	AM	PM
1. Sand Canyon & Irvine	.77	.72
4. Alton & Irvine	.40	.68
5. Musick/Fairbanks & Irvine	.61	.70
6. Bake & Irvine/Trabuco	.89	1.01*
7. Lake Forest & Trabuco	.70	.64
8. Ridge Route & Trabuco	.42	.66
9. El Toro & Trabuco	.61	.74
10. Alton & Toledo	.66	.83
11. Bake & Toledo	.79	.82
12. Alton & Jeronimo	.57	.66
13. Bake & Jeronimo	1.11*	.84
14. Alton & Muirlands/Barranca	.68	.77
15. Bake & Muirlands	.76	.87
17. Bake & Rockfield	.68	.77
18. Barranca & Irvine Center	.52	.49
19. Irvine Center & Alton	.80	.88
20. I-5 NB Ramps & Alton	.64	.55
21. Enterprise & Alton	.64	.78
22. Bake & I-5 NB Ramps	-	-
23. Bake & I-5 SB Off-Ramp	-	-

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
 .61 - .70 B
 .71 - .80 C
 .81 - .90 D
 .91 - 1.00 E
 Above 1.00 F

Source: Traffic counts carried out in 1996



LEGEND

— Existing roadway

- - - Future roadway

Figure II-2

INTERSECTION LOCATION DIAGRAM

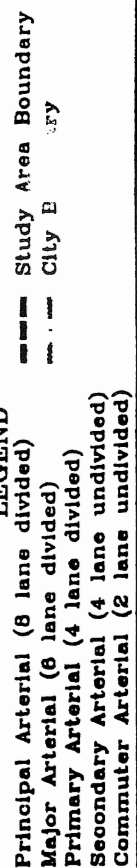


Figure II-3
MASTER PLAN OF ARTERIAL HIGHWAYS

Table II-2

ROADWAY IMPROVEMENTS SUMMARY

LOCATION	TIME FRAME	IMPROVEMENT
I. ARTERIALS		
Alton Pkwy, Irvine Blvd to Foothill Transportation Corridor	Interim Year	Extend six-lane roadway north to FTC
Bake Pkwy n/o I-5	Interim Year	Widen to eight lanes
Bake Pkwy s/o I-5	Long-Range	Extend six-lane roadway southwest to Irvine Center Drive
Rockfield e/o Alton Pkwy	Long-Range	Extend four-lane roadway west to Alton Pkwy
El Toro Rd/I-5 to Trabuco Rd	Interim Year	Widen to eight lanes
El Toro Rd n/o Trabuco Rd	Interim Year	Widen to six lanes
Irvine Blvd, Sand Cyn Rd to Alton Pkwy	Interim Year	Widen to six lanes
II. INTERSECTIONS		
1. Sand Cyn & Irvine	Long-Range	Add 2nd NB right-turn lane Add 3rd SB through lane Add 2nd EB left-turn lane Add 3rd EB through lane Add 2nd WB left-turn lane Add 3rd WB through lane
2. ETC East Leg SB & Irvine	Interim Year	New intersection
3. ETC East Leg NB & Irvine	Interim Year	New intersection
4. Alton & Irvine	Interim Year	New north leg
6. Bake & Irvine/Trabuco	Interim Year	Add 3rd NB through lane
13. Bake & Jeronimo	Interim Year	Add 2nd NB left-turn lane
14. Alton & Muirlands/Barranca	Long-Range	Add SB free right-turn lane Add WB right-turn lane
16. Alton & Rockfield	Long-Range	New intersection
18. Barranca & Irvine Center	Interim Year	Add 3rd NB through lane Add 3rd SB through lane Add 4th EB through lane Add EB right-turn lane Add WB right-turn lane
	Long-Range	Add NB free right-turn lane
19. Irvine Center & Alton	Long-Range	Add NB free right-turn lane
20. I-5 NB & Alton	Interim Year	Add NB free right-turn lane
21. Enterprise & Alton	Long-Range	Add NB free right-turn lane Add 2nd WB left-turn lane
22. Bake & I-5 NB	Interim Year	New intersection
23. Bake & I-5 SB	Interim Year	New intersection

PROJECT DESCRIPTION

This chapter describes the traffic characteristics of the proposed project. Estimated trip generation of the jail expansion is first quantified, followed by a description of the geographic distribution of these trips onto the study area network.

TRIP GENERATION

The existing jail facility currently houses approximately 1,250 minimum security inmates. The jail facility is proposed to be expanded to house 7,580 minimum, medium, and maximum security inmates. Orange County Sheriff staff, health care agency staff, visitors, inmate transfers, and deliveries are all expected to increase with the increase in inmates.

New trips generated by the proposed expansion of the facility were derived from data provided by the Orange County Sheriff Department, and are summarized according to individual components in Table III-1. As this table indicates, the proposed project will generate an additional 4,253 daily trips, of which 474 will be generated during the AM peak hour and 425 will be generated during the PM peak hour. The following sections discuss the individual components of the overall trip generation.

Jail Staff

The jail facility staff is comprised of Sheriff Department Staff and health care agency (HCA) staff. Data provided by the Sheriff Department indicates that Sheriff Department staff will increase by 1,066 employees and HCA staff will increase by 295 employees. These 1,361 additional employees will be divided into 36 eight, nine, or 10 hour shifts.

Table III-1

MUSICK FACILITY EXPANSION TRIP GENERATION SUMMARY

	AM PEAK HOUR			PM PEAK HOUR			ADT
	IN	OUT	TOTAL	IN	OUT	TOTAL	
JAIL							
Staff	96	217	313	0	114	114	2,475
Inmate transportation	11	12	23	12	11	23	96
Visitors	31	0	31	114	114	228	926
Deliveries	5	4	9	4	5	9	90
Total	143	233	376	130	244	374	3,587
SHERIFF SUBSTATION/ICF							
Substation staff	17	15	32	10	9	19	225
Patrol cars	16	15	31	0	11	11	186
ICF staff	35	0	35	8	13	21	255
Total	68	30	98	18	33	51	666
TOTAL	211	263	474	148	277	425	4,253

Peak hour trip generation for jail staff (Sheriff staff and HCA staff) was determined from the work shifts which arrive or depart during the AM peak hour (7:00 - 8:00 AM) or PM peak hour (5:00 - 6:00 PM). It was assumed that employees would arrive at the site 10 to 15 minutes before the start of their shift and would leave 10 to 15 minutes after the end of their shift; therefore, employees working shifts which begin between 7:15 and 8:15 AM or end between 6:45 and 7:45 AM would potentially impact the study intersections during the AM peak hour, and employees working shifts which begin between 5:15 and 6:15 PM or end between 4:45 and 5:45 PM would potentially impact the study intersections during the PM peak hour. Vehicle occupancy of jail staff is estimated to be 1.1 employees per vehicle.

Jail Visitors

Daily visitor traffic estimates were provided by the Sheriff Department. An average of 1,033 additional visitors in 463 vehicles are expected for the proposed jail expansion. Visiting hours will be from 8:00 AM until 5:00 PM. During the AM peak hour three percent of the total daily visitor traffic is expected to enter the facility. During the PM peak hour 24 percent of the total daily visitor traffic is expected to enter and exit the facility (12 percent inbound, 12 percent outbound).

Inmate Transportation

The Sheriff Department has estimated that inmate transfers by bus to and from the courts in Santa Ana, Irvine, and Laguna Niguel will account for 96 trips daily. Of these daily trips, 24 percent (12 percent inbound, 12 percent outbound) are expected to occur during the AM peak hour and a similar number during the PM peak hour (the inbound trips in the AM and outbound trips in the PM are the empty buses, since the buses are not stored on-site.)

Jail Service/Deliveries

Sheriff Department estimates of trip generation include 90 delivery truck trips per day. Of these daily trips, 10 percent (five percent inbound, five percent outbound) are estimated to occur during the AM and PM peak hours.

Sheriff Station

Sheriff Department services for south Orange County east of the San Diego Freeway (I-5), which are currently being provided out of a temporary location in Aliso Viejo, will be relocated to the project site. Access will be on Bake Parkway. The Sheriff Department estimates that 124 employees will be stationed at the proposed site. Sheriff station employees will be divided into 17 shifts. Peak hour trip generation for Sheriff Station employees was determined from the work shifts which begin between 7:15 and 8:15 AM or 5:15 and 6:15 PM and end between 6:45 and 7:45 AM or 4:45 and 5:45 PM. Vehicle occupancy of Sheriff Station staff is estimated to be 1.1 employees per vehicle.

In addition to staff arrivals and departures, 93 patrol cars will be deployed from the Sheriff Station daily. Patrols which begin or end between 7:00 and 8:00 AM or 5:00 and 6:00 PM would potentially impact the study intersections during the AM and PM peak hours.

Intermediate Care Facility (ICF)

Information utilized to derive the trip generation for the ICF was provided by the County of Orange Social Services Administration based on current operations at the Manchester Complex in Orange. Trip generation for ICF staff, visitors, and deliveries is estimated at 255 trips daily. Approximately 14 percent of the daily trips are estimated to arrive during the AM peak hour, and approximately eight percent of the daily trips are estimated to arrive and depart during the PM peak hour.

TRIP DISTRIBUTION

Distribution of project-generated traffic was derived by considering the different trip components (i.e., staff, visitors, inmate transfers, deliveries, and Sheriff patrols). Each component differs with respect to its travel characteristics and therefore has a different purpose.

Jail and Sheriff Station/ICF staff and visitor distribution was derived based on future demographic distribution for Orange County, with population being the primary factor. Inmate

transfer distribution was derived based on the locations of county courthouses in relation to the location of the proposed project. Delivery truck distribution was derived based on employment centers in Orange County. Patrol car distribution was derived based on the demographics of the south county communities served by the Sheriff Department.

The combined trip distribution on the interim year circulation system is illustrated in Figure III-1. As can be seen, the majority of the traffic is oriented to the I-5 and I-405 freeways. Changes in the demographics and development of new areas in Orange County by the year 2020 result in the combined general trip distribution on the year 2020 circulation system being slightly different, and this is presented in Figure III-2. The major change is an increase in the distribution to areas north of the site with an equal decrease in the distribution to the areas south of the site.

PROJECT PHASING

The project is proposed to be implemented in three complexes. The trip generation by complex is summarized in Table III-2. As can be seen here, the Complex I would add around 1,700 average daily vehicle trips to the existing trips generated by the facility, Complex II an additional 1,000 trips, and Complex III a further 1,550 trips. This data is given by complex for informational purposes only, since as explained in Chapter I, both the interim year and long-range impact analyses are based on full project buildout, even though the project construction may be shorter or longer than the interim year time period.

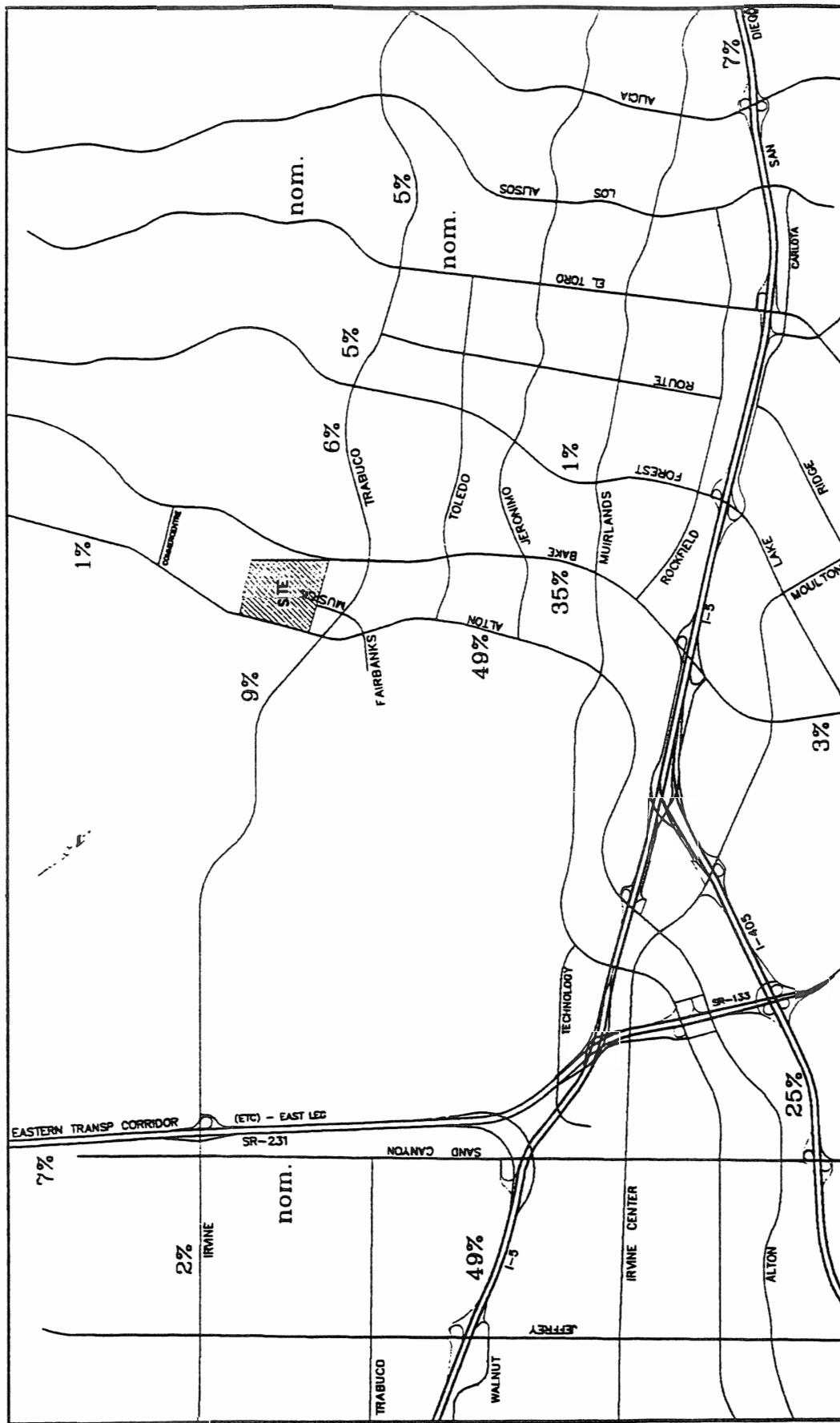


Figure III-1
INTERIM YEAR DISTRIBUTION

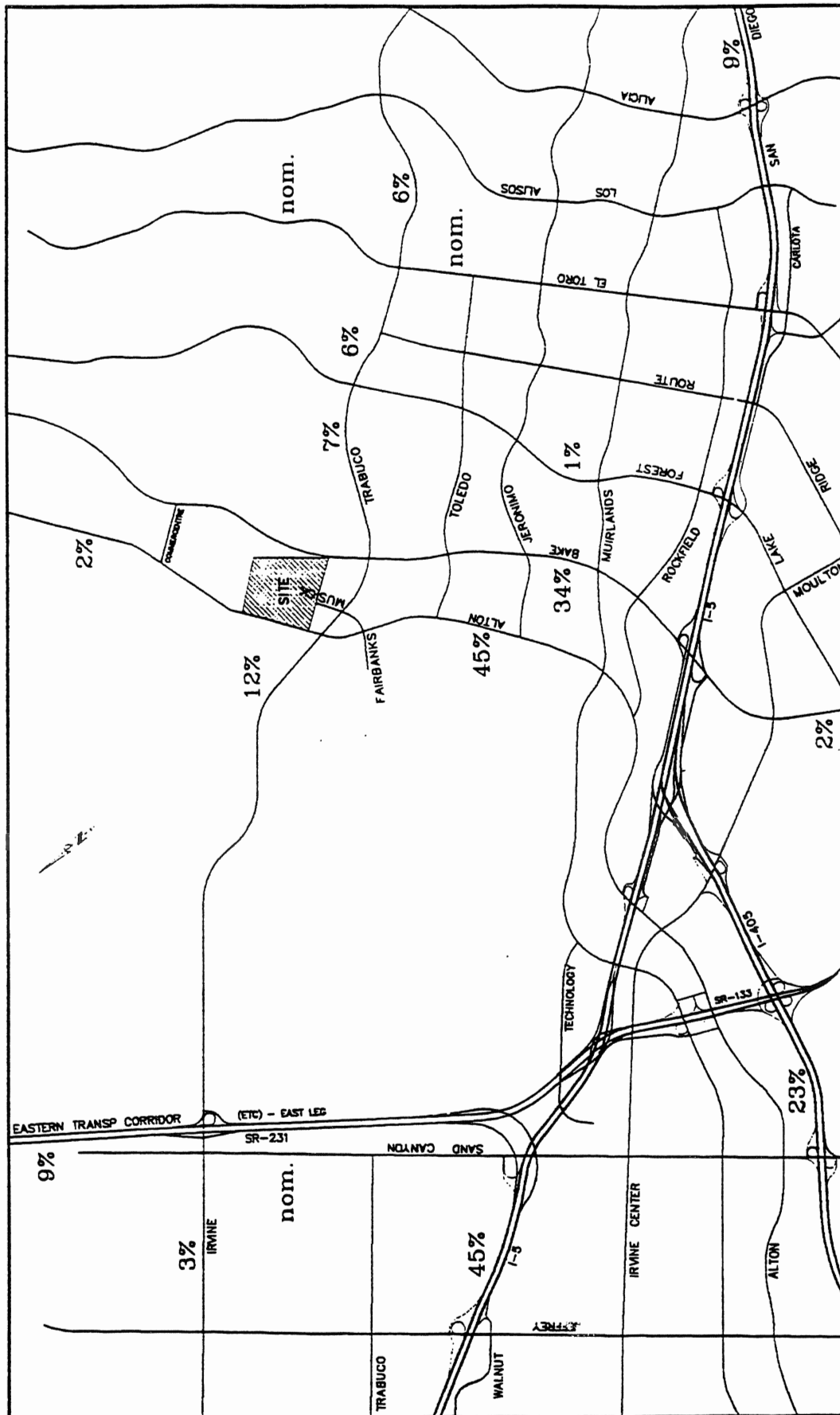


Table III-2

MUSICK FACILITY EXPANSION SUMMARY BY COMPLEX

	AM PEAK HOUR			PM PEAK HOUR			ADT
	IN	OUT	TOTAL	IN	OUT	TOTAL	
EXISTING TRIPS	49	15	64	19	48	67	1,204
COMPLEX I (new trips)							
Jail							
Staff	55	78	133	0	57	57	869
Inmate transportation	1	1	2	1	1	2	8
Visitors	4	0	4	15	15	30	126
Deliveries	1	0	1	0	1	1	12
Total	61	79	140	16	74	90	1,015
Sheriff substation/ICF							
Substation staff	17	15	32	10	9	19	225
Patrol cars	16	15	31	0	11	11	186
ICF staff	35	0	35	8	13	21	255
Total	68	30	98	18	33	51	666
Total Complex I	129	109	238	34	107	141	1,681
COMPLEX I + II (new trips)							
Jail							
Staff	75	126	201	0	82	82	1,584
Inmate transportation	5	5	10	5	5	10	40
Visitors	12	0	12	45	45	90	364
Deliveries	2	1	3	1	2	3	35
Total	94	132	226	51	134	185	2,023
Sheriff substation/ICF							
Substation staff	17	15	32	10	9	19	225
Patrol cars	16	15	31	0	11	11	186
ICF staff	35	0	35	8	13	21	255
Total	68	30	98	18	33	51	666
Total Complex I + II	162	162	324	69	167	236	2,689

(Continued)

Table III-2 (cont)
MUSICK FACILITY EXPANSION SUMMARY BY COMPLEX

	AM PEAK HOUR			PM PEAK HOUR			ADT
	IN	OUT	TOTAL	IN	OUT	TOTAL	
COMPLEX I + II + III (new trips)							
Jail							
Staff	96	217	313	0	114	114	2,475
Inmate transportation	11	12	23	12	11	23	96
Visitors	31	0	31	114	114	228	926
Deliveries	5	4	9	4	5	9	90
Total	143	233	376	130	244	374	3,587
Sheriff substation/ICF							
Substation staff	17	15	32	10	9	19	225
Patrol cars	16	15	31	0	11	11	186
ICF staff	35	0	35	8	13	21	255
Total	68	30	98	18	33	51	666
Total Complex I + II + III	211	263	474	148	277	425	4,253
Total Existing Plus New Trips	260	278	538	167	325	492	5,457

IV

IMPACT ANALYSIS

This chapter presents the impacts of the proposed project for interim year and long-range conditions. For both time frames, project trips were added to the background no-project traffic volumes, and impacts identified according to the performance criteria described in Chapter I.

INTERIM YEAR IMPACTS

Traffic generated by the proposed project was added to the no-project interim year volumes using the project trip distribution discussed in the previous chapter. As noted in Chapter I, full project buildout was assumed for this interim year analysis, even though actual project construction may be shorter or longer than the five year time period of the interim year time frame.

Figure IV-1 illustrates interim year no-project average daily traffic (ADT) volumes and Figure IV-2 shows the corresponding with-project volumes. The most notable increase in traffic occurs on Alton Parkway (2,000 ADT), with a lesser increase on Bake Parkway (1,000 ADT).

Arterial volume-to-capacity (V/C) ratios for with and without project conditions are presented in Table IV-1. Two locations can be considered as being impacted under the performance criteria used for this analysis:

Alton Parkway between Jeronimo and Muirlands

Alton Parkway between Muirlands and I-5

The interim year no-project and with-project peak hour intersection capacity utilization (ICU) values are summarized in Table IV-2 (actual ICU calculations are included in Appendix A). These

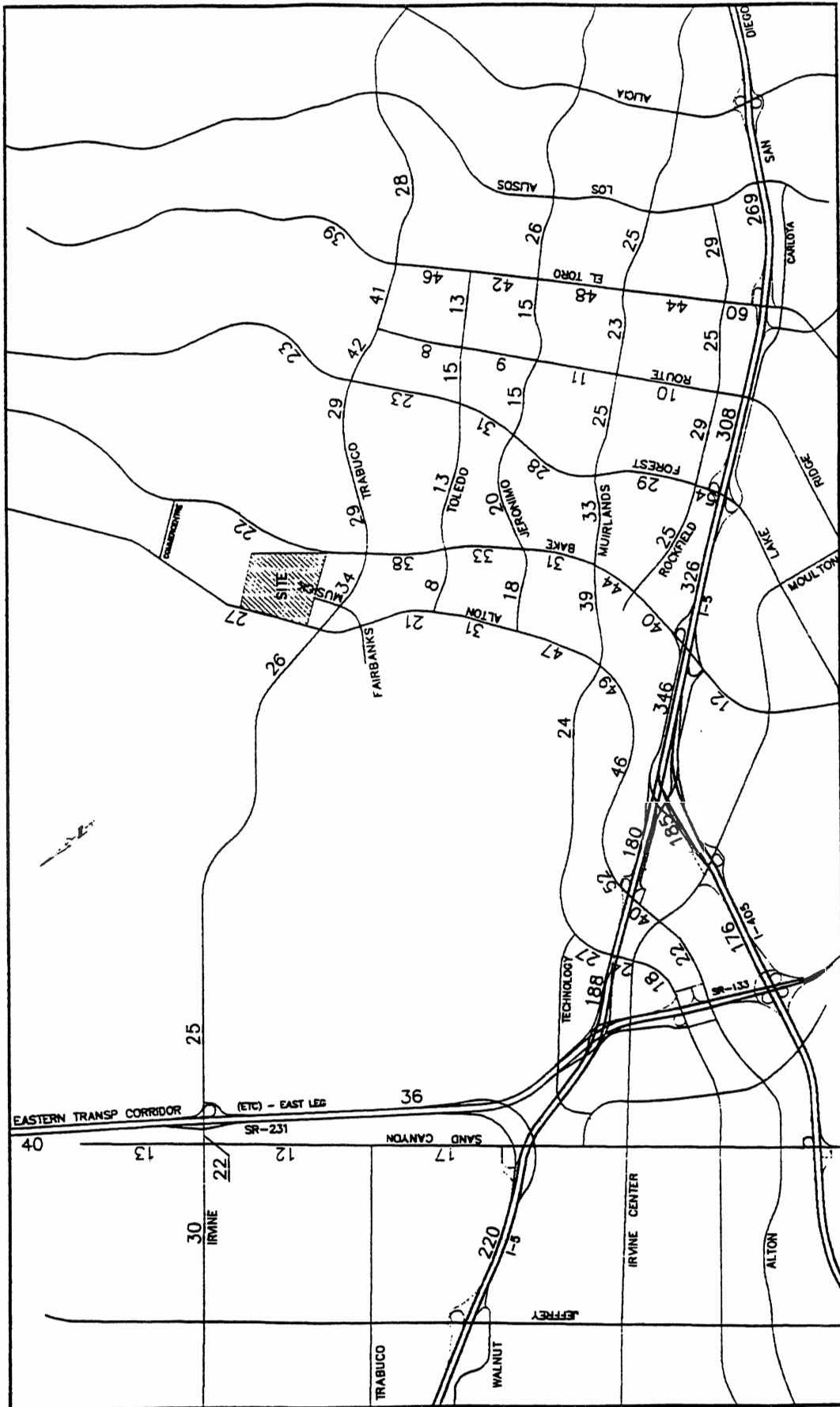


Figure IV-1
INTERIM YEAR ADT VOLUMES
- NO PROJECT

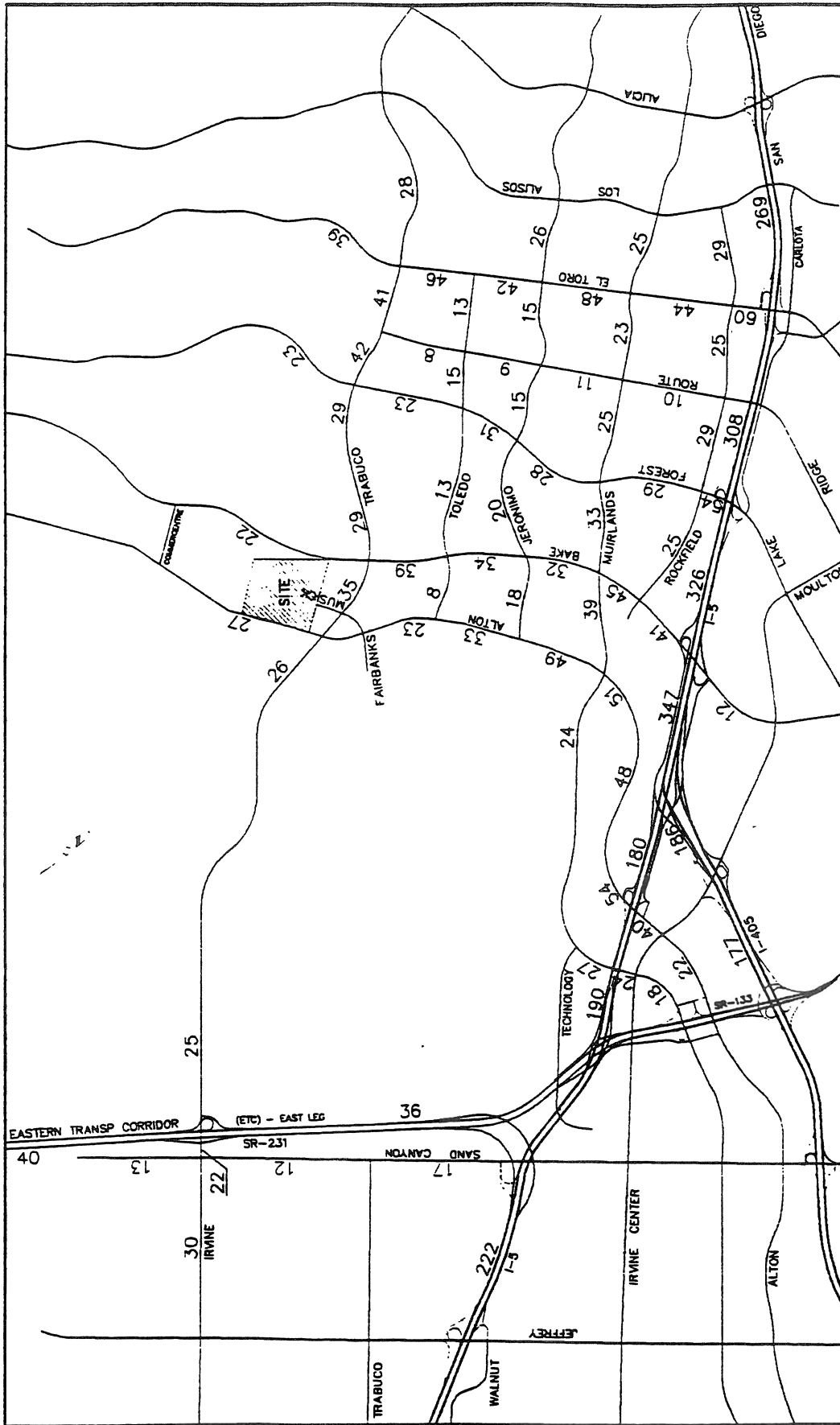


Figure IV-2
INTERIM YEAR ADT VOLUMES
— WITH PROJECT

Table IV-1

INTERIM YEAR VOLUME/CAPACITY RATIO SUMMARY

	LANES	CAPACITY	INTERIM YEAR		INTERIM YEAR WITH PROJECT		PROJECT
			VOLUME	V/C	VOLUME	V/C	CONTR
IRVINE (CITY/SPHERE)							
Alton w/o Irvine Center	6	54,000	22,000	.41	22,000	.41	.00
Alton w/o I-5	6	54,000	40,000	.74	40,000	.74	.00
Alton e/o I-5	7	63,000	52,000	.83	54,000	.86	.03
Alton s/o Muirlands	6	54,000	49,000	.91*	51,000	.94*	.03
Alton n/o Muirlands	6	54,000	47,000	.87	49,000	.91*	.04
Alton n/o Jeronimo	6	54,000	31,000	.57	33,000	.61	.04
Alton n/o Toledo	6	54,000	21,000	.39	23,000	.43	.04
Alton n/o Trabuco	6	54,000	27,000	.50	27,000	.50	.00
Bake n/o I-5	8	72,000	40,000	.56	41,000	.57	.01
Bake n/o Rockfield	8	72,000	44,000	.61	45,000	.63	.02
Barranca w/o Irvine Center	4	32,000	18,000	.56	18,000	.56	.00
Barranca w/o I-5	4	42,000	24,000	.57	24,000	.57	.00
Barranca e/o I-5	4	42,000	27,000	.64	27,000	.64	.00
Barranca w/o Alton	4	32,000	24,000	.75	24,000	.75	.00
Irvine w/o Sand Canyon	6	54,000	30,000	.56	30,000	.56	.00
Irvine e/o Sand Canyon	6	54,000	22,000	.41	22,000	.41	.00
Irvine w/o Alton	6	54,000	26,000	.48	26,000	.48	.00
Irvine e/o Alton	6	54,000	34,000	.63	34,000	.63	.00
Jeronimo e/o Alton	4	32,000	18,000	.56	18,000	.56	.00
Muirlands e/o Alton	4	32,000	39,000	1.22*	39,000	1.22*	.00
Sand Canyon n/o Trabuco	6	54,000	12,000	.22	12,000	.22	.00
Sand Canyon n/o Irvine	4	32,000	13,000	.41	13,000	.41	.00
Toledo e/o Alton	4	28,000	8,000	.29	8,000	.29	.00
IRVINE/LAKE FOREST							
Bake n/o Muirlands	6	54,000	31,000	.57	32,000	.59	.02
Bake n/o Jeronimo	6	54,000	33,000	.61	34,000	.63	.02
Bake n/o Toledo	6	54,000	38,000	.70	39,000	.72	.02
Rockfield e/o Bake	4	32,000	25,000	.78	25,000	.78	.00
LAKE FOREST							
Bake n/o Trabuco	4	37,500	22,000	.59	22,000	.59	.00
El Toro n/o Toledo	8	75,000	46,000	.61	46,000	.61	.00
El Toro n/o Trabuco	6	56,300	39,000	.69	39,000	.69	.00
Jeronimo e/o Bake	4	37,500	20,000	.53	20,000	.53	.00
Lake Forest n/o Toledo	6	56,300	23,000	.41	23,000	.41	.00
Lake Forest n/o Trabuco	6	56,300	23,000	.41	23,000	.41	.00
Muirlands e/o Bake	4	37,500	33,000	.88	33,000	.88	.00
Ridge Route n/o Toledo	4	37,500	8,000	.21	8,000	.21	.00
Rockfield e/o Bake	4	32,000	25,000	.78	25,000	.78	.00

(Continued)

Table IV-1 (cont)
INTERIM YEAR VOLUME/CAPACITY RATIO SUMMARY

	LANES	CAPACITY	INTERIM YEAR VOLUME	V/C	INTERIM YEAR WITH PROJECT VOLUME	V/C	PROJECT CONTR
LAKE FOREST (cont)							
Toledo e/o Bake	4	25,000	13,000	.52	13,000	.52	.00
Trabuco e/o Bake	6	56,300	29,000	.52	29,000	.52	.00
Trabuco w/o Lake Forest	6	56,300	29,000	.52	29,000	.52	.00
Trabuco e/o Lake Forest	6	56,300	42,000	.75	42,000	.75	.00
Trabuco e/o Ridge Route	6	56,300	41,000	.73	41,000	.73	.00
Trabuco e/o El Toro	6	56,300	28,000	.50	28,000	.50	.00

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Table IV-2

INTERIM YEAR ICU SUMMARY

INTERSECTION	INTERIM YEAR		INTERIM YEAR W/PROJECT	
	AM	PM	AM	PM
1. Sand Canyon & Irvine	.71	.54	.71	.54
2. ETC E Leg SB Ramps & Irvine	.44	.52	.44	.53
3. ETC E Leg NB Ramps & Irvine	.42	.48	.42	.49
4. Alton & Irvine	.85	.89	.95 *	.95 *
5. Musick/Fairbanks & Irvine	.67	.81	.67	.82
6. Bake & Irvine/Trabuco	.70	.88	.72	.90
7. Lake Forest & Trabuco	.70	.70	.71	.70
8. Ridge Route & Trabuco	.55	.74	.55	.74
9. El Toro & Trabuco	.86	.83	.86	.84
10. Alton & Toledo	.49	.71	.52	.73
11. Bake & Toledo	.69	.77	.71	.78
12. Alton & Jeronimo	.75	.67	.78	.68
13. Bake & Jeronimo	.68	.70	.69	.71
14. Alton & Muirlands/Barranca	.88	.81	.90	.82
15. Bake & Muirlands	.68	.77	.69	.78
17. Bake & Rockfield	.55	.66	.56	.67
18. Barranca & Irvine Center	.68	.56	.69	.56
19. Irvine Center & Alton	.70	.89	.71	.89
20. I-5 NB Ramps & Alton	.58	.58	.60	.60
21. Enterprise & Alton	.55	.72	.58	.72
22. Bake & I-5 NB Ramps	.35	.63	.36	.64
23. Bake & I-5 SB Off-Ramp	.40	.75	.40	.77

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
 .61 - .70 B
 .71 - .80 C
 .81 - .90 D
 .91 - 1.00 E
 Above 1.00 F

ICU values are based on the assumed interim year circulation system discussed in Chapter III. As this table indicates, the only project impact is at the intersection of Alton Parkway and Irvine Boulevard which is projected to operate at LOS "E" with the addition of project-generated traffic. Potential improvements for this intersection presented later in this chapter.

LONG-RANGE IMPACTS

Project-generated traffic was added to the long-range volumes based on the long-range project trip distribution presented in the previous chapter to produce long-range with-project volumes. The long-range no-project and with project ADT volumes are illustrated in Figures IV-3 and IV-4, respectively. Increases due to the proposed project can be seen on Alton Parkway (2,000 ADT) and on Bake Parkway (1,000 ADT).

Arterial V/C ratios for with and without project conditions are summarized in Table IV-3. Arterial links impacted under the performance criteria used here are as follows:

Alton Parkway, Jeronimo to Muirlands
Alton Parkway, Rockfield to I-5

The long-range no-project and with project peak hour ICU values are summarized in Table IV-4 (actual ICU calculations are included in Appendix A). As this ICU table indicates, five intersections are projected to operate at LOS "E" or worse under long-range with project conditions. Of these five intersections, four are impacted by the proposed project (as noted in Chapter I, for this analysis, a significant project impact is defined as an increase of .01 or more in the ICU value at an intersection which reaches LOS "E" or worse with the addition of project traffic). Potential improvements which mitigate project impacts are discussed in the next section.

MITIGATION MEASURES

One intersection under interim year conditions and four intersections under long-range conditions are identified as being impacted by the proposed project. Potential improvements for these intersections are discussed in the following sections.

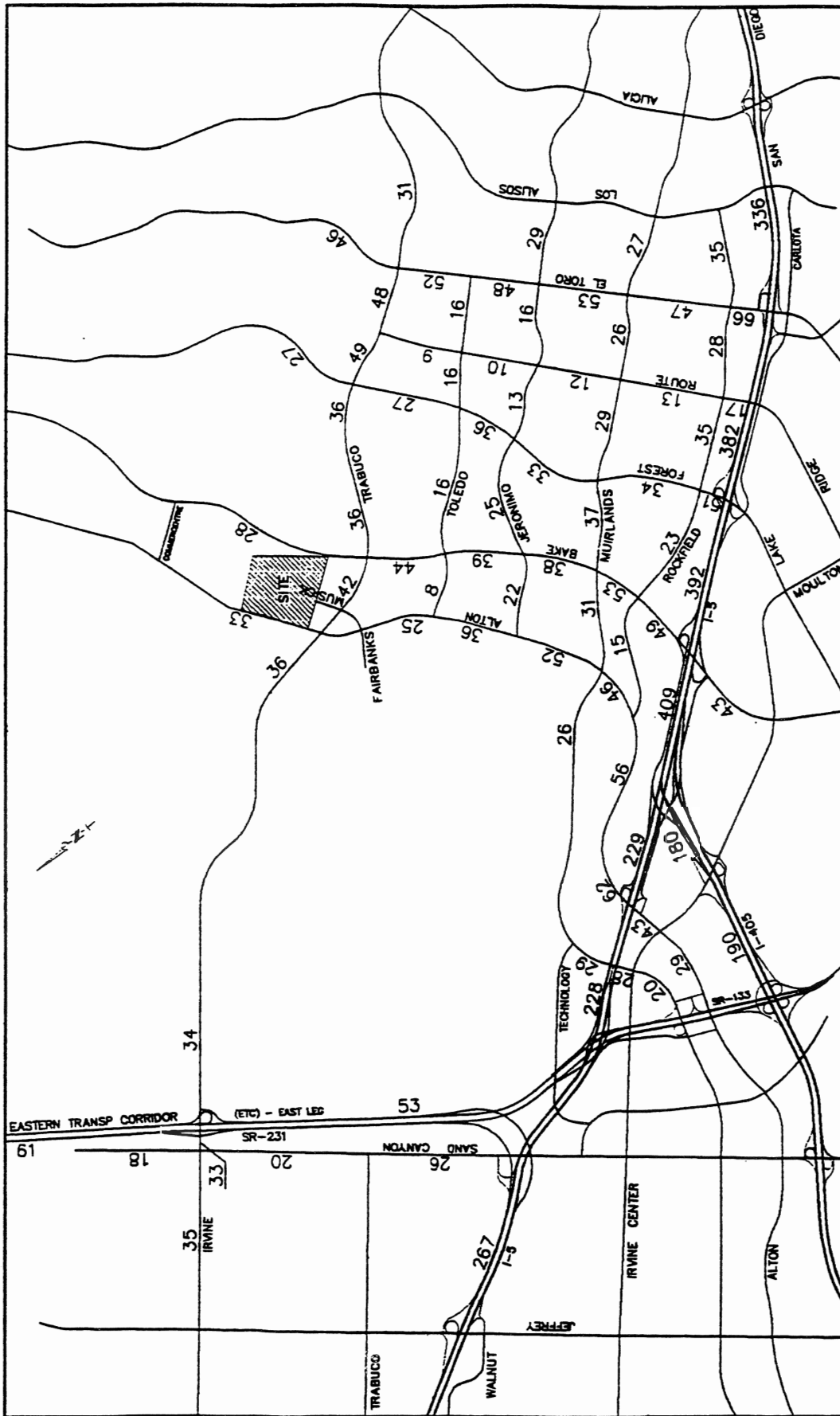
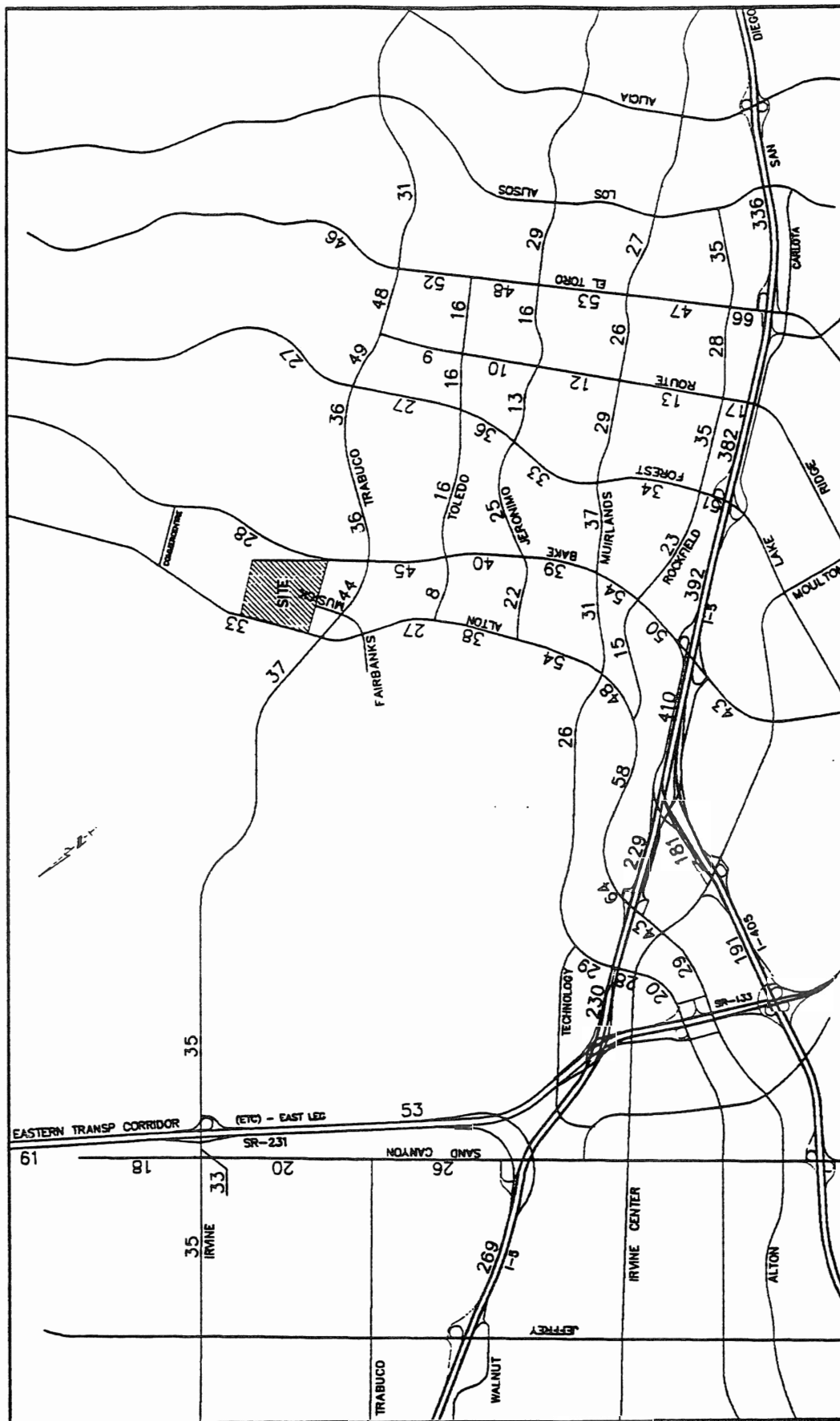


Figure IV-3
LONG-RANGE ADT VOLUMES
- NO PROJECT



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Table IV-3

LONG-RANGE VOLUME/CAPACITY RATIO SUMMARY

	LANES	CAPACITY	LONG-RANGE VOLUME	V/C	LONG-RANGE WITH PROJECT VOLUME	V/C	PROJECT CONTR
IRVINE (CITY/SPHERE)							
Alton w/o Irvine Center	6	54,000	29,000	.54	29,000	.54	.00
Alton w/o I-5	6	54,000	43,000	.80	43,000	.80	.00
Alton e/o I-5	8	72,000	62,000	.86	64,000	.89	.03
Alton s/o Rockfield	6	54,000	56,000	1.04*	58,000	1.07*	.03
Alton s/o Muirlands	6	54,000	46,000	.85	48,000	.89	.04
Alton n/o Muirlands	6	54,000	52,000	.96*	54,000	1.00*	.04
Alton n/o Jeronimo	6	54,000	36,000	.67	38,000	.70	.03
Alton n/o Toledo	6	54,000	25,000	.46	27,000	.50	.04
Alton n/o Trabuco	6	54,000	33,000	.61	33,000	.61	.00
Bake n/o I-5	8	72,000	49,000	.68	50,000	.69	.01
Bake n/o Rockfield	8	72,000	53,000	.74	54,000	.75	.01
Barranca w/o Irvine Center	4	32,000	20,000	.63	20,000	.63	.00
Barranca w/o I-5	4	42,000	28,000	.67	28,000	.67	.00
Barranca e/o I-5	4	42,000	29,000	.69	29,000	.69	.00
Barranca w/o Alton	4	32,000	26,000	.81	26,000	.81	.00
Irvine w/o Sand Canyon	6	54,000	35,000	.65	35,000	.65	.00
Irvine e/o Sand Canyon	6	54,000	33,000	.61	33,000	.61	.00
Irvine e/o ETC East Leg	6	54,000	34,000	.63	35,000	.65	.02
Irvine w/o Alton	6	54,000	36,000	.67	37,000	.69	.02
Irvine e/o Alton	6	54,000	42,000	.78	44,000	.81	.03
Jeronimo e/o Alton	4	32,000	22,000	.69	22,000	.69	.00
Muirlands e/o Alton	4	32,000	31,000	.97*	31,000	.97*	.00
Sand Canyon n/o Trabuco	6	54,000	20,000	.37	20,000	.37	.00
Sand Canyon n/o Irvine	4	32,000	18,000	.56	18,000	.56	.00
Toledo e/o Alton	4	28,000	8,000	.29	8,000	.29	.00
IRVINE/LAKE FOREST							
Bake n/o Muirlands	6	54,000	38,000	.70	39,000	.72	.02
Bake n/o Jeronimo	6	54,000	39,000	.72	40,000	.74	.02
Bake n/o Toledo	6	54,000	44,000	.81	45,000	.83	.02
Rockfield e/o Bake	4	32,000	23,000	.72	23,000	.72	.00
LAKE FOREST							
Bake n/o Trabuco	4	37,500	28,000	.75	28,000	.75	.00
El Toro n/o Toledo	8	75,000	52,000	.69	52,000	.69	.00
El Toro n/o Trabuco	6	56,300	46,000	.82	46,000	.82	.00
Jeronimo e/o Bake	4	37,500	25,000	.67	25,000	.67	.00
Lake Forest n/o Toledo	6	56,300	27,000	.48	27,000	.48	.00
Lake Forest n/o Trabuco	6	56,300	27,000	.48	27,000	.48	.00
Muirlands e/o Bake	4	37,500	37,000	.99*	37,000	.99*	.00
Rockfield e/o Alton	4	32,000	15,000	.47	15,000	.47	.00
Rockfield e/o Bake	4	32,000	23,000	.72	23,000	.72	.00

(Continued)

Table IV-3 (cont)
LONG-RANGE VOLUME/CAPACITY RATIO SUMMARY

	LANES	CAPACITY	LONG-RANGE VOLUME	V/C	LONG-RANGE WITH PROJECT VOLUME	V/C	PROJECT CONTR
LAKE FOREST (cont)							
Toledo e/o Bake	4	25,000	16,000	.64	16,000	.64	.00
Trabuco e/o Bake	6	56,300	36,000	.64	36,000	.64	.00
Trabuco w/o Lake Forest	6	56,300	36,000	.64	36,000	.64	.00
Trabuco e/o Lake Forest	6	56,300	49,000	.87	49,000	.87	.00
Trabuco e/o Ridge Route	6	56,300	48,000	.85	48,000	.85	.00
Trabuco e/o El Toro	6	56,300	31,000	.55	31,000	.55	.00

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Table IV-4

LONG-RANGE ICU SUMMARY

INTERSECTION	LONG-RANGE		LONG-RANGE W/PROJECT	
	AM	PM	AM	PM
1. Sand Canyon & Irvine	.63	.58	.64	.58
2. ETC E Leg SB Ramps & Irvine	.59	.67	.60	.67
3. ETC E Leg NB Ramps & Irvine	.59	.60	.59	.60
4. Alton & Irvine	.83	.96 *	.86	.99 *
5. Musick/Fairbanks & Irvine	.75	.94 *	.76	.96 *
6. Bake & Irvine/Trabuco	.82	1.02 *	.83	1.03 *
7. Lake Forest & Trabuco	.78	.82	.78	.83
8. Ridge Route & Trabuco	.63	.85	.63	.86
9. El Toro & Trabuco	.95 *	.94 *	.95 *	.94 *
10. Alton & Toledo	.68	.87	.70	.88
11. Bake & Toledo	.71	.84	.72	.85
12. Alton & Jeronimo	.78	.76	.80	.78
13. Bake & Jeronimo	.89	.77	.91 *	.78
14. Alton & Muirlands/Barranca	.84	.80	.86	.81
15. Bake & Muirlands	.78	.70	.79	.71
16. Alton & Rockfield	.85	.81	.88	.81
17. Bake & Rockfield	.72	.80	.73	.80
18. Barranca & Irvine Center	.70	.67	.70	.68
19. Irvine Center & Alton	.78	.80	.79	.80
20. I-5 NB Ramps & Alton	.71	.83	.73	.84
21. Enterprise & Alton	.55	.87	.56	.87
22. Bake & I-5 NB Ramps	.83	.61	.83	.61
23. Bake & I-5 SB Off-Ramp	.54	.75	.55	.76

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
 .61 - .70 B
 .71 - .80 C
 .81 - .90 D
 .91 - 1.00 E
 Above 1.00 F

Interim Year Mitigation

The project has a significant impact under interim year conditions on the intersection of Alton Parkway and Irvine Boulevard, which worsens from LOS "D" to LOS "E" with the addition of project-generated traffic during the AM and PM peak hours. A second southbound left-turn lane and a westbound right-turn lane added to this intersection will result in LOS "D" as summarized in the following table.

INTERIM YEAR ICU SUMMARY - WITH MITIGATION												
INTERSECTION	INTERIM YEAR NO-PROJECT 2000				INTERIM YEAR W/PROJECT				INTERIM YEAR W/PROJECT W/MITIGATION			
	AM	LOS	PM	LOS	AM	LOS	PM	LOS	AM	LOS	PM	LOS
4. Alton & Irvine	.85	D	.89	D	.95*	E	.95*	E	.82	D	.81	D

Long-Range Mitigation

Under long-range conditions the project has a significant impact on four intersections which operate at an unacceptable level of service with the addition of project-generated traffic. Potential improvements which mitigate project impacts are listed in the following table.

LONG-RANGE INTERSECTION IMPROVEMENTS	
INTERSECTION	IMPROVEMENT
4. Alton & Irvine	Convert 3rd NB through lane to shared through/right-turn lane
5. Musick & Irvine	Add NB right-turn lane
6. Bake & Irvine/Trabuco	Add NB right-turn lane Convert 3rd NB through lane to shared through/right-turn lane
13. Bake & Jeronimo	Provide EB right-turn overlap signal phase

The improvements identified here result in LOS "D" or better as summarized in Table IV-5, with the exception of Musick/Fairbanks and Irvine Boulevard. The improvements identified here for Musick/Fairbanks and Irvine Boulevard more than mitigate the project impacts at the intersection although the intersection will continue to operate at LOS "E" during the PM peak hour.

Link Deficiencies

The ADT link analysis noted that certain sections of Alton Parkway exceeded the ADT capacity of the link and were measurably impacted by the project. Because of the generalized rates of ADT capacity values, the approach taken to evaluating these potential impacts is to examine the peak hour ICUs at the ends of the link. The deficiency is assumed to be hypothetical rather than actual if the two intersections operate at an adequate level of service.

The following table summarizes the impacted links and shows the relevant ICU values.

LINK DEFICIENCY ANALYSIS						
Location	North Intersection ICU			South Intersection ICU		
	(Int #)	AM	PM	(Int #)	AM	PM
INTERIM YEAR						
Alton, Jeronimo to Muirlands	(12)	.78	.68	(14)	.90	.87
Alton, Muirlands to I-5	(14)	.90	.82	(20)	.60	.60
LONG-RANGE						
Alton, Jeronimo to Muirlands	(12)	.80	.78	(14)	.86	.81
Alton, Rockfield to I-5	(16)	.88	.81	(20)	.73	.84

Since all intersections operate at LOS "D" or better (ICU < .90), it can be concluded that no improvements would be needed for these links.

The deficient links are located in the City of Irvine. The City of Irvine has a deficient link analysis methodology for links which operate at LOS "E" or worse. For links which operate above .90 but less than .95 the intersections at the ends of the link are examined as outlined above. Therefore, the deficient links under interim year conditions operate acceptably.

Table IV-5

LONG-RANGE LOS SUMMARY - WITH MITIGATION

INTERSECTION	NO-PROJECT LONG-RANGE				LONG-RANGE WITH PROJECT				LONG-RANGE WITH PROJECT WITH MITIGATION			
	AM	LOS	PM	LOS	AM	LOS	PM	LOS	AM	LOS	PM	LOS
4. Alton & Irvine	.83	D	.96*	E	.86	D	.99*	E	.86	D	.88	D
5. Musick & Irvine	.75	C	.94*	E	.76	C	.96*	E	.72	C	.93*	E
6. Bake & Irvine/Trabuco	.82	D	1.02*	F	.83	D	1.03*	F	.81	D	.81	D
13. Bake & Jeronimo	.89	D	.77	C	.91*	E	.78	C	.90	D	.78	C

For links which operate above .95, the peak hour link V/C is utilized. A project has an impact if project-related traffic increases the peak hour link V/C by .03 or more. A peak hour link analysis was performed for the long-range conditions. Table IV-6 summarizes the results of the long-range peak hour link analysis (calculation sheets are included in Appendix B). As this table shows, the proposed project has no impact on these links.

PROJECT ACCESS

Two warrants are typically applicable to situations such as this, one for "minimum vehicle traffic," and a second for "interruption of continuous traffic."

To satisfy the Minimum Vehicular signal warrant, the major street must carry at least 6,720 ADT (both directions) and the minor street must carry at least 1,680 ADT (one direction only). The jail entrance on Alton Parkway will carry approximately 1,200 ADT in one direction, which is not sufficient to satisfy the Minimum Vehicular warrant. The Sheriff Station/ICF entrance on Bake Parkway will carry approximately 300 ADT in one direction and does not satisfy the Minimum Vehicular warrant.

The Interruption of Continuous Traffic signal warrant is satisfied if the major street carries at least 10,080 ADT (total of both directions) and the minor street carries at least 850 ADT in one direction. Since the jail entrance on Alton Parkway carries approximately 1,200 ADT in one direction and Alton Parkway is projected to carry 27,000 ADT under interim year conditions, the Interruption of Continuous Traffic warrant is satisfied at the jail entrance on Alton Parkway. The volumes at the Sheriff Station/ICF entrance on Bake Parkway do not satisfy the Interruption of Continuous Traffic warrant.

SUMMARY OF MITIGATION MEASURES

Table IV-7 summarizes the project mitigation measures. The County will work with the appropriate City agencies to ensure the operational feasibility of recommended mitigation measures.

Table IV-6

LONG-RANGE DEFICIENT LINK ANALYSIS SUMMARY

LOCATION	-- LONG-RANGE --			LONG-RANGE -- WITH PROJECT --			PROJECT CONTRIBUTION	
	TOTAL V/C	AM V/C	PM V/C	TOTAL V/C	AM V/C	PM V/C	AM	PM
Alton, Jeronimo to Muirlands	.96*	1.09*	1.04*	1.00*	1.11*	1.06*	.02	.02
Alton, Rockfield to I-5	1.04*	.96*	.78	1.07*	.98*	.80	.02	.02

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
 .61 - .70 B
 .71 - .80 C
 .81 - .90 D
 .91 - 1.00 E
 Above 1.00 F

Table IV-7

SUMMARY OF MITIGATION MEASURES

INTERSECTION	IMPROVEMENT
INTERIM YEAR	
4. Alton & Irvine	Add 2nd SBL left-turn lane Add WB right-turn lane
5. Alton & Jail Entrance	New signalized intersection
LONG-RANGE	
4. Alton & Irvine	Convert 3rd NB through lane to shared through/right-turn lane
5. Musick & Irvine	Add NB right-turn lane
6. Bake & Irvine/Trabuco	Add NB right-turn lane Convert 3rd NB through lane to shared through/right-turn lane
13. Bake & Jeronimo	Provide EB right-turn overlap signal phase
Abbreviations: NB Northbound SB Southbound EB Eastbound WB Westbound L Left-turn lane T Thru-lane R Right-turn lane	

APPENDIX A

INTERSECTION CAPACITY UTILIZATION

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values. ICU calculations were performed for the intersections shown in Figure A-1. For simplicity, signalization is assumed at each intersection. Precise ICU calculations of existing non-signalized intersections would require a more detailed analysis.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1700 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both thru and right-turn traffic (typically with a width of 19 feet from curb to outside of thru-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example For Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:

$$\text{RTOG} = \text{V/C (NBT)}$$

Otherwise,

$$\text{RTOG} = \text{V/C (NBL)} + \text{V/C (SBT)} - \text{V/C (SBL)}$$

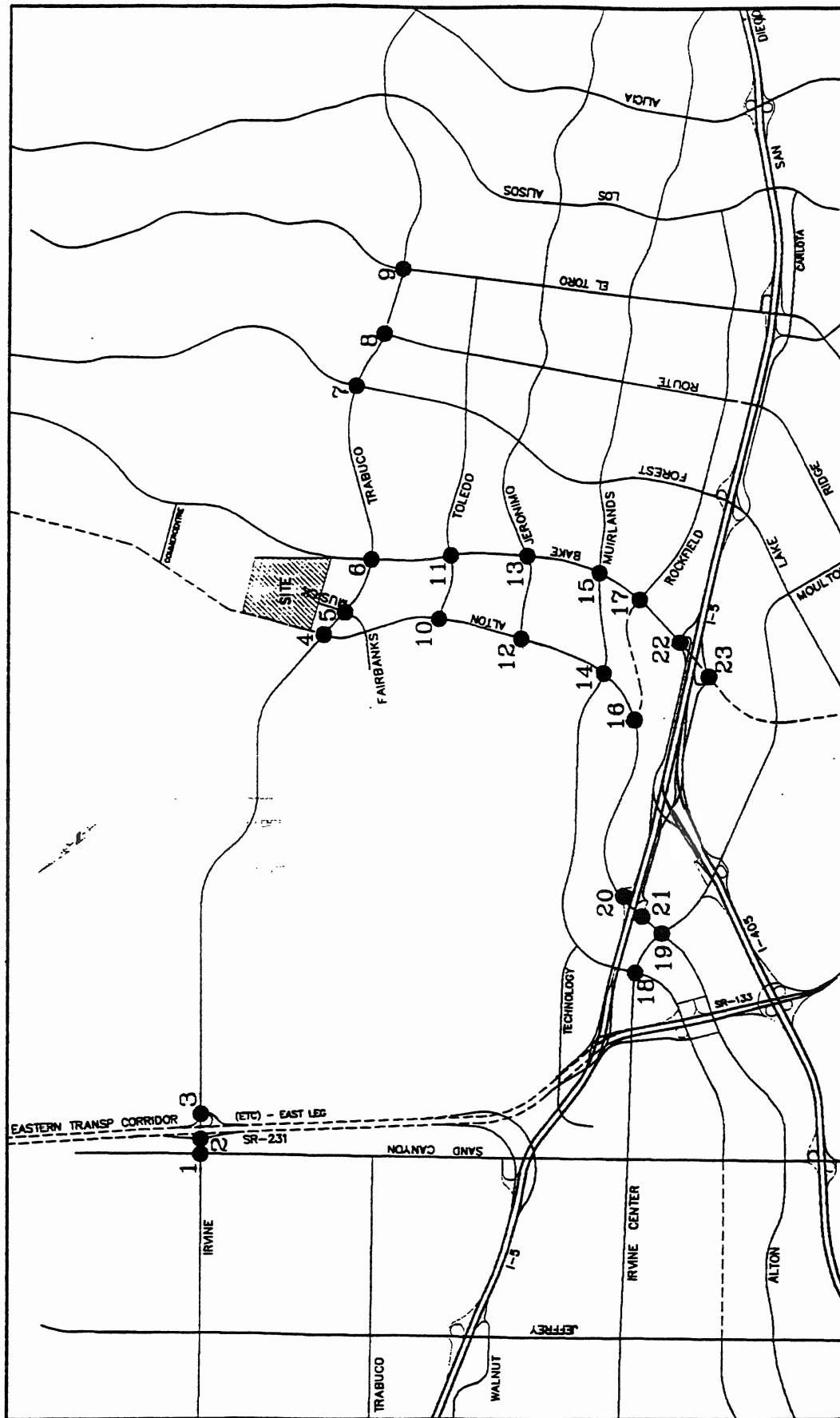


Figure A-1
INTERSECTION LOCATION DIAGRAM

LEGEND
 — Existing roadway
 - - - Future roadway

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:

$$RTOR = V/C (WBL)$$

Otherwise,

$$RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)$$

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

$$RTOG = RTOG + V/C (WBL)$$

$$RTOR = RTOR - V/C (WBL)$$

4. Total Right-Turn Capacity (RTC) Availability For NBR

$$RTC = RTOG + \text{factor} \times RTOR$$

Where factor = RTOR saturation flow factor (75%)

Right-turn adjustment is then as follows: Additional ICU = $V/C (NBR) - RTC$

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/thru, thru/right, left/thru/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Thru Lane

1. Average Lane Volume (ALV)

$$ALV = \frac{\text{Left-Turn Volume} + \text{Thru Volume}}{\text{Total Left} + \text{Thru Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$ALV (\text{Left}) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$ALV (\text{Thru}) = \frac{\text{Thru Volume}}{\text{Thru Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and thru V/C ratios for this case are calculated as follows:

$$V/C (\text{Left}) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$V/C (\text{Thru}) = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Thru) is greater than ALV then full dedication to the thru approach is warranted, and left-turn and thru V/C ratios are calculated as follows:

$$V/C (\text{Left}) = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$V/C (\text{Thru}) = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Thru) are both less than ALV, the left/thru lane is assumed to be truly shared and each left, left/thru or thru approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/thru V/C ratio is calculated as follows:

$$V/C (\text{Left/Thru}) = \frac{\text{Left-Turn Volume} + \text{Thru Volume}}{\text{Total Left} + \text{Thru Approach Capacity (including shared lane)}}$$

This V/C (Left/Thru) ratio is assigned as the V/C (Thru) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Thru) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:

$$V/C \text{ (Left)} = V/C \text{ (Thru)}$$

If approach has only one left-turn lane (shared lane), then:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared thru/right lanes. If full dedication of a shared thru/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected.

When an approach contains more than one shared lane (e.g., left/thru and thru/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

1. Sand Canyon & Irvine

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	30	.01*	60	.02
NBT	2	3400	150	.04	1150	.34*
NBR	1	1700	130	.08	410	.24
SBL	2	3400	10	.00	10	.00
SBT	2	3400	1140	.34*	100	.03
SBR	1	1700	50	.03	10	.01
EBL	1	1700	40	.02*	70	.04
EBT	2	3400	550	.16	980	.29*
EBR	1	1700	70	.04	20	.01
WBL	2	3400	340	.10	140	.04*
WBT	2	3400	1180	.35*	670	.20
WBR	1	1700	10	.01	10	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.72

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	140	.04*
NBT	2	3400	60	.02	10	.00
NBR	1	1700	70	.04	170	.10
SBL	2	3400	30	.01	50	.01
SBT	2	3400	410	.12*	10	.00*
SBR	1	1700	180	.11	70	.04
EBL	1	1700	170	.10*	10	.01
EBT	2	3400	870	.26	1270	.37*
EBR	1	1700	10	.01	10	.01
WBL	1	1700	380	.22	50	.03*
WBT	2	3400	1480	.44*	680	.20
WBR	1	1700	70	.04	30	.02
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.54

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	140	.04*
NBT	2	3400	60	.02	10	.00
NBR	1	1700	70	.04	170	.10
SBL	2	3400	30	.01	50	.01
SBT	2	3400	410	.12*	10	.00*
SBR	1	1700	180	.11	70	.04
EBL	1	1700	170	.10*	10	.01
EBT	2	3400	870	.26	1270	.37*
EBR	1	1700	10	.01	10	.01
WBL	1	1700	380	.22	50	.03*
WBT	2	3400	1480	.44*	680	.20
WBR	1	1700	70	.04	30	.02
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.54

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	430	.13*
NBT	2	3400	140	.04	10	.00
NBR	2	3400	90	.03	590	.17
SBL	2	3400	90	.03	10	.00
SBT	3	5100	540	.11*	10	.00*
SBR	d	1700	70	.04	70	.04
EBL	2	3400	250	.07*	10	.00
EBT	3	5100	1090	.21	1790	.35*
EBR	d	1700	190	.11	10	.01
WBL	2	3400	500	.15	90	.03*
WBT	3	5100	2060	.40*	1530	.30
WBR	d	1700	40	.02	10	.01
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.58

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1. Sand Canyon & Irvine

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	10	.00	430	.13*
NBT	2	3400	140	.04	10	.00
NBR	2	3400	90	.03	590	.17
SBL	2	3400	90	.03	10	.00
SBT	3	5100	540	.11*	10	.00*
SBR	d	1700	70	.04	70	.04
EBL	2	3400	250	.07*	10	.00
EBT	3	5100	1100	.22	1790	.35*
EBR	d	1700	190	.11	10	.01
WBL	2	3400	500	.15	90	.03*
WBT	3	5100	2070	.41*	1540	.30
WBR	d	1700	40	.02	10	.01
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.58

2. ETC E Leg SB Ramps & Irvine

Interim year						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	0	0	0	0		
NBT	0	0	0	0		
NBR	0	0	0	0		
SBL	1.5		50	.03*	50	.01*
SBT	0	5100	0		0	
SBR	1.5		180	.05	90	{.00}
EBL	0	0	0		0	
EBT	3	5100	930	.18	2060	.40*
EBR	1	1700	40	.02	50	.03
WBL	1	1700	40	.02	100	.06*
WBT	3	5100	1750	.34*	670	.13
WBR	0	0	0		0	
Right Turn Adjustment Clearance Interval			SBR	.02* .05*		.05*
TOTAL CAPACITY UTILIZATION				.44		.52

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		60	.04*	60	.02*
SBT	0	5100	0		0	
SBR	1.5		180	.05	90	{.00}
EBL	0	0	0		0	
EBT	3	5100	930	.18	2060	.40*
EBR	1	1700	40	.02	50	.03
WBL	1	1700	40	.02	100	.06*
WBT	3	5100	1750	.34*	670	.13
WBR	0	0	0		0	
Right Turn Adjustment Clearance Interval			SBR	.01* .05*		.05*
TOTAL CAPACITY UTILIZATION				.44		.53

Long range						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		160	.09*	160	.05*
SBT	0	5100	0		0	
SBR	1.5		320	.09	240	{.00}
EBL	0	0	0		0	
EBT	3	5100	1080	.21	2240	.44*
EBR	1	1700	190	.11	150	.09
WBL	1	1700	120	.07	220	.13*
WBT	3	5100	2280	.45*	1390	.27
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.67

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		180		170	.05*
SBT	0	5100	0	.10*	0	
SBR	1.5		320		240	{.00}
EBL	0	0	0		0	
EBT	3	5100	1090	.21	2240	.44*
EBR	1	1700	190	.11	150	.09
WBL	1	1700	120	.07	220	.13*
WBT	3	5100	2290	.45*	1400	.27
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.67

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3. ETC E Leg NB Ramps & Irvine

Interim year						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1.5		40	.01*	60	{.02}*
NBT	0	5100	0		0	.02
NBR	1.5		70	{.00}	40	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	30	{.02}*	70	
EBT	3	5100	940	.19	2040	.41*
EBR	1	1700	0	.00	0	.00
WBL	0	0	0		0	
WBT	3	5100	1750	.34*	710	.14
WBR	1	1700	190	.11	120	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .42 .48

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1.5		40	.01*	60	{.02}*
NBT	0	5100	0		0	.02
NBR	1.5		70	{.00}	40	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	30	{.02}*	70	
EBT	3	5100	960	.19	2050	.42*
EBR	1	1700	0	.00	0	.00
WBL	0	0	0		0	
WBT	3	5100	1750	.34*	710	.14
WBR	1	1700	210	.12	140	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .42 .49

Long range						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1.5		110	.03*	140	{.08}*
NBT	0	5100	0		0	.08
NBR	1.5		240		270	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	100	{.06}*	210	
EBT	3	5100	1140	.24	2190	.47*
EBR	1	1700	0	.00	0	.00
WBL	0	0	0		0	
WBT	3	5100	2290	.45*	1470	.29
WBR	1	1700	240	.14	280	.16
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .60

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1.5		110	.03*	140	{.08}*
NBT	0	5100	0		0	.08
NBR	1.5		240		270	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	100	{.06}*	210	
EBT	3	5100	1160	.25	2210	.47*
EBR	1	1700	0	.00	0	.00
WBL	0	0	0		0	
WBT	3	5100	2300	.45*	1480	.29
WBR	1	1700	260	.15	300	.18
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .59 .60

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4. Alton & Irvine

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	60	.02*	220	.06*
NBT	0	0	0		0	
NBR	1	1700	40	.02	530	.31
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	430	.08*	1560	.31*
EBR	1	1700	160	.09	50	.03
WBL	2	3400	860	.25*	90	.03*
WBT	3	5100	1500	.29	570	.11
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.23*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .40 .68

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	50	.01*	100	.03
NBT	3	5100	170	.03	800	.16*
NBR	1	1700	20	.01	450	.26
SBL	1	1700	310	.18	440	.26*
SBT	3	5100	690	.20*	140	.04
SBR	0	0	400	.24	250	.15
EBL	1	1700	290	.17*	340	.20
EBT	3	5100	380	.07	1590	.31*
EBR	1	1700	250	.15	10	.01
WBL	2	3400	280	.08	90	.03*
WBT	3	5100	1740	.42*	410	.12
WBR	0	0	380		410	.24
Right Turn Adjustment					NBR	.08*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .85 .89

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	50	.01	100	.03
NBT	3	5100	260	.05*	880	.17*
NBR	1	1700	20	.01	450	.26
SBL	1	1700	400	.24*	540	.32*
SBT	3	5100	810	.24	290	.09
SBR	0	0	430	.25	290	.17
EBL	1	1700	310	.18*	350	.21
EBT	3	5100	380	.07	1580	.31*
EBR	1	1700	250	.15	10	.01
WBL	2	3400	280	.08	90	.03*
WBT	3	5100	1730	.43*	390	.11
WBR	0	0	450		460	.27
Right Turn Adjustment					NBR	.07*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .95 .95

Interim year with Project (Buildout) w/mitigati

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	50	.01*	100	.03
NBT	3	5100	260	.05	880	.17*
NBR	1	1700	20	.01	450	.26
SBL	2	3400	400	.12	540	.16*
SBT	3	5100	810	.24*	290	.09
SBR	0	0	430	.25	290	.17
EBL	1	1700	310	.18*	350	.21
EBT	3	5100	380	.07	1580	.31*
EBR	1	1700	250	.15	10	.01
WBL	2	3400	280	.08	90	.03*
WBT	3	5100	1730	.34*	390	.08
WBR	1	1700	450	.26	460	.27
Right Turn Adjustment					Multi	.09*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .82 .81

002355

4. Alton & Irvine

Long range						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	20	.01*	120	.04
NBT	3	5100	150	.03	910	.18*
NBR	1	1700	30	.02	600	.35
SBL	2	3400	360	.11	550	.16*
SBT	3	5100	1150	.23*	150	.03
SBR	f		610		500	
EBL	2	3400	450	.13*	450	.13
EBT	3	5100	530	.10	2040	.40*
EBR	1	1700	360	.21	10	.01
WBL	2	3400	380	.11	20	.01*
WBT	3	5100	2110	.41*	700	.14
WBR	1	1700	500	.29	610	.36
Right Turn Adjustment					NBR	.16*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION			.83		.96	

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	20	.01*	120	.04
NBT	3	5100	240	.05	980	.19*
NBR	1	1700	30	.02	600	.35
SBL	2	3400	450	.13	650	.19*
SBT	3	5100	1260	.25*	290	.06
SBR	f		650		550	
EBL	2	3400	480	.14*	460	.14
EBT	3	5100	530	.10	2030	.40*
EBR	1	1700	360	.21	10	.01
WBL	2	3400	380	.11	20	.01*
WBT	3	5100	2100	.41*	680	.13
WBR	1	1700	570	.34	660	.39
Right Turn Adjustment					NBR	.15*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION			.86		.99	

Long range with Project (Buildout) w/mitigation						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	20	.01*	120	.04
NBT	2.5	6800	240	.05	980	.23*
NBR	1.5		30		600	
SBL	2	3400	450	.13	650	.19*
SBT	3	5100	1260	.25*	290	.06
SBR	f		650		550	
EBL	2	3400	480	.14*	460	.14
EBT	3	5100	530	.10	2030	.40*
EBR	1	1700	360	.21	10	.01
WBL	2	3400	380	.11	20	.01*
WBT	3	5100	2100	.41*	680	.13
WBR	1	1700	570	.34	660	.39
Clearance Interval				.05*	.05*	
TOTAL CAPACITY UTILIZATION			.86		.88	

002356

5. Musick/Fairbanks & Irvine

Existing						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	1	1700	10 .01	40 .02		
NBT	1	1700	90 .08*	40 .20*		
NBR	0	0	40	300		
SBL	1	1700	10 .01*	90 .05*		
SBT	1	1700	20 .03	90 .11		
SBR	0	0	30	100		
EBL	1	1700	90 .05*	20 .01		
EBT	3	5100	320 .07	1920 .38*		
EBR	0	0	40	10		
WBL	1	1700	220 .13	30 .02*		
WBT	3	5100	2020 .42*	620 .13		
WBR	0	0	110	20		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.61	.70		

Interim year						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	1	1700	10 .01	40 .02		
NBT	1	1700	110 .09*	40 .21*		
NBR	0	0	40	320		
SBL	1	1700	10 .01*	80 .05*		
SBT	1	1700	20 .03	110 .12		
SBR	0	0	30	90		
EBL	1	1700	80 .05*	20 .01		
EBT	3	5100	650 .14	2420 .48*		
EBR	0	0	40	10		
WBL	1	1700	250 .15	30 .02*		
WBT	3	5100	2290 .47*	840 .17		
WBR	0	0	100	20		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.67	.81		

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	1	1700	10 .01	40 .02		
NBT	1	1700	90 .09*	30 .21*		
NBR	0	0	70	330		
SBL	1	1700	10 .01*	70 .04*		
SBT	1	1700	20 .02	90 .09		
SBR	0	0	20	70		
EBL	1	1700	70 .04*	20 .01		
EBT	3	5100	740 .15	2520 .50*		
EBR	0	0	40	10		
WBL	1	1700	260 .15	40 .02*		
WBT	3	5100	2360 .48*	890 .18		
WBR	0	0	80	20		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.67	.82		

Long range						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	1	1700	10 .01	40 .02		
NBT	1	1700	120 .09*	40 .22*		
NBR	0	0	40	340		
SBL	1	1700	10 .01*	70 .04*		
SBT	1	1700	20 .03	120 .12		
SBR	0	0	30	90		
EBL	1	1700	80 .05*	20 .01		
EBT	3	5100	790 .16	3090 .61*		
EBR	0	0	40	10		
WBL	1	1700	270 .16	30 .02*		
WBT	3	5100	2740 .55*	1150 .23		
WBR	0	0	90	20		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.75	.94		

5. Musick/Fairbanks & Irvine

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	10	.01	40	.02
NBT	1	1700	100	.10*	30	.22*
NBR	0	0	70		350	
SBL	1	1700	10	.01*	60	.04*
SBT	1	1700	20	.02	100	.10
SBR	0	0	20		70	
EBL	1	1700	70	.04*	20	.01
EBT	3	5100	890	.18	3190	.63*
EBR	0	0	40		10	
WBL	1	1700	280	.16	40	.02*
WBT	3	5100	2810	.56*	1200	.24
WBR	0	0	70		20	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.96

Long range with Project (Buildout) w/mitigation						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	10	.01	40	.02*
NBT	1	1700	100	.06*	30	.02
NBR	1	1700	70	.04	350	.21
SBL	1	1700	10	.01*	60	.04
SBT	1	1700	20	.02	100	.10*
SBR	0	0	20		70	
EBL	1	1700	70	.04*	20	.01
EBT	3	5100	890	.18	3190	.63*
EBR	0	0	40		10	
WBL	1	1700	280	.16	40	.02*
WBT	3	5100	2810	.56*	1200	.24
WBR	0	0	70		20	
Right Turn Adjustment					NBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.93

002358

6. Bake & Irvine/Trabuco

Existing						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	220	.06*	80	.02
NBT	2	3400	300	.09	1870	.55*
NBR	d	1700	90	.05	810	.48
SBL	2	3400	50	.01	70	.02*
SBT	3	5100	1370	.27*	420	.08
SBR	1	1700	750	.44	130	.08
EBL	2	3400	100	.03*	830	.24
EBT	3	5100	150	.03	1690	.33*
EBR	1	1700	80	.05	270	.16
WBL	2	3400	520	.15	190	.06*
WBT	3	5100	1690	.33*	300	.06
WBR	1	1700	30	.02	90	.05
Right Turn Adjustment			SBR	.15*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.89		1.01	

Interim year						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	380	.11	260	.08
NBT	3	5100	790	.19*	430	.13*
NBR	0	0	170		650	.38
SBL	2	3400	30	.01*	320	.09*
SBT	3	5100	370	.07	640	.13
SBR	1	1700	270	.16	40	.02
EBL	2	3400	40	.01*	170	.05
EBT	3	5100	510	.10	1780	.35*
EBR	1	1700	170	.10	650	.38
WBL	2	3400	360	.11	160	.05*
WBT	3	5100	1950	.38*	660	.13
WBR	1	1700	340	.20	20	.01
Right Turn Adjustment			SBR	.06*	NBR	.21*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.70		.88	

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	430	.13	300	.09
NBT	3	5100	810	.19*	440	.13*
NBR	0	0	170		650	.38
SBL	2	3400	40	.01*	330	.10*
SBT	3	5100	380	.07	650	.13
SBR	1	1700	280	.16	50	.03
EBL	2	3400	70	.02*	180	.05
EBT	3	5100	520	.10	1790	.35*
EBR	1	1700	240	.14	730	.43
WBL	2	3400	360	.11	160	.05*
WBT	3	5100	1960	.38*	670	.13
WBR	1	1700	360	.21	20	.01
Right Turn Adjustment			SBR	.07*	Multi	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.72		.90	

Long range						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	340	.10	290	.09
NBT	3	5100	1160	.25*	610	.18*
NBR	0	0	120		690	.41
SBL	2	3400	20	.01*	420	.12*
SBT	3	5100	460	.09	890	.17
SBR	1	1700	100	.06	60	.04
EBL	2	3400	40	.01*	350	.10
EBT	3	5100	580	.11	2190	.43*
EBR	1	1700	190	.11	730	.43
WBL	2	3400	460	.14	80	.02*
WBT	3	5100	2540	.50*	770	.15
WBR	1	1700	250	.15	10	.01
Right Turn Adjustment					NBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.82		1.02	

6. Bake & Irvine/Trabuco

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	390	.11	330	.10
NBT	3	5100	1180	.25*	620	.18*
NBR	0	0	120		690	.41
SBL	2	3400	30	.01*	430	.13*
SBT	3	5100	460	.09	900	.18
SBR	1	1700	110	.06	70	.04
EBL	2	3400	70	.02*	360	.11
EBT	3	5100	600	.12	2210	.43*
EBR	1	1700	260	.15	800	.47
WBL	2	3400	460	.14	80	.02*
WBT	3	5100	2550	.50*	780	.15
WBR	1	1700	270	.16	10	.01
Right Turn Adjustment					NBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.83		1.03	

Long range with Project (Buildout) w/mitigation						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	390	.11	330	.10
NBT	2.5	6800	1180	.23*	620	.18*
NBR	1.5		120		690	.20
SBL	2	3400	30	.01*	430	.13*
SBT	3	5100	460	.09	900	.18
SBR	1	1700	110	.06	70	.04
EBL	2	3400	70	.02*	360	.11
EBT	3	5100	600	.12	2210	.43*
EBR	1	1700	260	.15	800	.47
WBL	2	3400	460	.14	80	.02*
WBT	3	5100	2550	.50*	780	.15
WBR	1	1700	270	.16	10	.01
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.81		.81	

002360

7. Lake Forest & Trabuco

Existing

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	140	.04*	290	.09
NBT	3	5100	220	.04	790	.15*
NBR	1	1700	50	.03	310	.18
SBL	2	3400	140	.04	220	.06*
SBT	3	5100	1160	.29*	440	.10
SBR	0	0	330		70	
EBL	2	3400	100	.03*	390	.11
EBT	3	5100	400	.08	1680	.33*
EBR	1	1700	220	.13	190	.11
WBL	2	3400	420	.12	180	.05*
WBT	3	5100	1470	.29*	650	.13
WBR	1	1700	110	.06	220	.13
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .70 .64

Interim year

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	100	.03*	340	.10
NBT	3	5100	220	.04	650	.13*
NBR	1	1700	30	.02	280	.16
SBL	2	3400	170	.05	450	.13*
SBT	3	5100	840	.21*	410	.11
SBR	0	0	240		140	
EBL	2	3400	180	.05*	370	.11
EBT	3	5100	480	.09	1790	.35*
EBR	1	1700	220	.13	180	.11
WBL	2	3400	470	.14	70	.02*
WBT	3	5100	1850	.36*	680	.13
WBR	1	1700	230	.14	260	.15
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .70 .70

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	100	.03*	340	.10
NBT	3	5100	220	.04	650	.13*
NBR	1	1700	30	.02	280	.16
SBL	2	3400	170	.05	450	.13*
SBT	3	5100	840	.21*	410	.11
SBR	0	0	240		140	
EBL	2	3400	180	.05*	370	.11
EBT	3	5100	500	.10	1810	.35*
EBR	1	1700	220	.13	180	.11
WBL	2	3400	470	.14	70	.02*
WBT	3	5100	1870	.37*	690	.14
WBR	1	1700	230	.14	260	.15
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .71 .70

Long range

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	120	.04*	430	.13
NBT	3	5100	210	.04	760	.15*
NBR	1	1700	40	.02	330	.19
SBL	2	3400	180	.05	400	.12*
SBT	3	5100	830	.20*	490	.12
SBR	0	0	210		120	
EBL	2	3400	220	.06*	290	.09
EBT	3	5100	650	.13	2320	.45*
EBR	1	1700	270	.16	250	.15
WBL	2	3400	540	.16	160	.05*
WBT	3	5100	2170	.43*	710	.14
WBR	1	1700	230	.14	250	.15
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .78 .82

002361

7. Lake Forest & Trabuco

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	120	.04*	430	.13
NBT	3	5100	210	.04	760	.15*
NBR	1	1700	40	.02	330	.19
SBL	2	3400	180	.05	400	.12*
SBT	3	5100	830	.20*	490	.12
SBR	0	0	210		120	
EBL	2	3400	220	.06*	290	.09
EBT	3	5100	680	.13	2340	.46*
EBR	1	1700	270	.16	250	.15
WBL	2	3400	540	.16	160	.05*
WBT	3	5100	2190	.43*	720	.14
WBR	1	1700	230	.14	250	.15
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION			.78		.83	
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8. Ridge Route & Trabuco

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	40	.02*	110	.06*
NBT	0	0	0		0	
NBR	1	1700	50	.03	280	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	490	.11	2070	.43*
EBR	0	0	80		110	
WBL	1	1700	120	.07	120	.07*
WBT	3	5100	1780	.35*	740	.15
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .42 .66

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	50	.03*	150	.09*
NBT	0	0	0		0	
NBR	1	1700	60	.04	300	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	540	.13	2350	.49*
EBR	0	0	130		130	
WBL	1	1700	110	.06	140	.08*
WBT	3	5100	2380	.47*	670	.13
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .55 .74

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	50	.03*	150	.09*
NBT	0	0	0		0	
NBR	1	1700	60	.04	300	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	560	.14	2370	.49*
EBR	0	0	130		130	
WBL	1	1700	110	.06	140	.08*
WBT	3	5100	2400	.47*	680	.13
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .55 .74

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	50	.03*	130	.08*
NBT	0	0	0		0	
NBR	1	1700	50	.03	330	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	710	.17	2900	.59*
EBR	0	0	150		120	
WBL	1	1700	140	.08	140	.08*
WBT	3	5100	2790	.55*	820	.16
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .63 .85

002363

8. Ridge Route & Trabuco

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	50	.03*	130	.08*
NBT	0	0	0		0	
NBR	1	1700	50	.03	330	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	740	.17	2920	.60*
EBR	0	0	150		120	
WBL	1	1700	140	.08	140	.08*
WBT	3	5100	2810	.55*	830	.16
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.05*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION			.63		.86	

9. El Toro & Trabuco

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	160	.05*	250	.07
NBT	3	5100	300	.07	840	.25*
NBR	0	0	80		440	.26
SBL	2	3400	170	.05	270	.08*
SBT	3	5100	1020	.20*	760	.15
SBR	1	1700	330	.19	140	.08
EBL	2	3400	90	.03*	420	.12
EBT	3	5100	320	.06	1430	.28*
EBR	d	1700	180	.11	180	.11
WBL	2	3400	250	.07	280	.08*
WBT	3	5100	1420	.28*	600	.12
WBR	d	1700	100	.06	170	.10
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .61 .74

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	330	.10*	360	.11
NBT	3	5100	710	.16	1430	.38*
NBR	0	0	90		490	
SBL	2	3400	130	.04	240	.07*
SBT	3	5100	1600	.31*	1210	.24
SBR	1	1700	320	.19	230	.14
EBL	2	3400	140	.04*	530	.16
EBT	3	5100	200	.04	1390	.27*
EBR	d	1700	340	.20	360	.21
WBL	2	3400	220	.06	200	.06*
WBT	3	5100	1830	.36*	380	.07
WBR	d	1700	110	.06	140	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .86 .83

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	330	.10*	360	.11
NBT	3	5100	710	.16	1430	.38*
NBR	0	0	90		490	
SBL	2	3400	130	.04	240	.07*
SBT	3	5100	1600	.31*	1210	.24
SBR	1	1700	320	.19	230	.14
EBL	2	3400	140	.04*	530	.16
EBT	3	5100	220	.04	1410	.28*
EBR	d	1700	340	.20	360	.21
WBL	2	3400	220	.06	200	.06*
WBT	3	5100	1850	.36*	390	.08
WBR	d	1700	110	.06	140	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .86 .84

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	320	.09*	320	.09
NBT	3	5100	700	.15	1500	.40*
NBR	0	0	80		520	
SBL	2	3400	140	.04	240	.07*
SBT	3	5100	1680	.33*	1240	.24
SBR	1	1700	370	.22	320	.19
EBL	2	3400	140	.04*	600	.18
EBT	3	5100	300	.06	1830	.36*
EBR	d	1700	420	.25	390	.23
WBL	2	3400	230	.07	190	.06*
WBT	3	5100	2220	.44*	630	.12
WBR	d	1700	110	.06	140	.08
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .95 .94

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9. El Toro & Trabuco

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	320	.09*	320	.09
NBT	3	5100	700	.15	1500	.40*
NBR	0	0	80		520	
SBL	2	3400	140	.04	240	.07*
SBT	3	5100	1680	.33*	1240	.24
SBR	1	1700	370	.22	320	.19
EBL	2	3400	140	.04*	600	.18
EBT	3	5100	320	.06	1850	.36*
EBR	d	1700	420	.25	390	.23
WBL	2	3400	230	.07	190	.06*
WBT	3	5100	2240	.44*	640	.13
WBR	d	1700	110	.06	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.95		.94

10. Alton & Toledo

Existing						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	80	.05*	40	.02
NBT	3	5100	440	.09	850	.17*
NBR	1	1700	180	.11	1090	.64
SBL	1	1700	30	.02	30	.02*
SBT	3	5100	1010	.20*	390	.08
SBR	0	0	10		10	
EBL	1	1700	0	.00	10	.01
EBT	1	1700	10	.02*	70	.09*
EBR	0	0	30		90	
WBL	1	1700	580	.34*	180	.11*
WBT	1	1700	90	.05	10	.01
WBR	1	1700	110	.06	40	.02
Right Turn Adjustment					NBR	.39*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION				.66	.83	

Interim year						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	40	.02*	20	.01
NBT	3	5100	460	.09	1530	.30*
NBR	1	1700	90	.05	310	.18
SBL	1	1700	60	.04	280	.16*
SBT	3	5100	1010	.21*	690	.14
SBR	0	0	70		30	
EBL	1	1700	20	.01	20	.01
EBT	1	1700	20	.02*	160	.13*
EBR	0	0	10		60	
WBL	1	1700	330	.19*	120	.07*
WBT	1	1700	140	.08	80	.05
WBR	1	1700	130	.08	40	.02
Clearance Interval				.05*	.05*	

TOTAL CAPACITY UTILIZATION .49 .71

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	40	.02*	20	.01
NBT	3	5100	560	.11	1610	.32*
NBR	1	1700	90	.05	310	.18
SBL	1	1700	60	.04	280	.16*
SBT	3	5100	1140	.24*	830	.17
SBR	0	0	70		30	
EBL	1	1700	20	.01	20	.01
EBT	1	1700	20	.02*	160	.13*
EBR	0	0	10		60	
WBL	1	1700	330	.19*	120	.07*
WBT	1	1700	140	.08	80	.05
WBR	1	1700	130	.08	40	.02
Clearance Interval				.05*	.05*	
TOTAL CAPACITY UTILIZATION				.52	.73	

Long range						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	120	.07*	10	.01
NBT	3	5100	470	.09	1920	.38*
NBR	1	1700	90	.05	230	.14
SBL	1	1700	70	.04	400	.24*
SBT	3	5100	1360	.28*	730	.15
SBR	0	0	50		20	
EBL	1	1700	10	.01	20	.01
EBT	1	1700	10	.02*	110	.11*
EBR	0	0	20		70	
WBL	1	1700	450	.26*	160	.09*
WBT	1	1700	60	.04	70	.04
WBR	1	1700	40	.02	90	.05
Clearance Interval				.05*	.05*	
TOTAL CAPACITY UTILIZATION				.68	.87	

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10. Alton & Toledo

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	120	.07*	10	.01
NBT	3	5100	570	.11	1990	.39*
NBR	1	1700	90	.05	230	.14
SBL	1	1700	70	.04	400	.24*
SBT	3	5100	1480	.30*	860	.17
SBR	0	0	50		20	
EBL	1	1700	10	.01	20	.01
EBT	1	1700	10	.02*	110	.11*
EBR	0	0	20		70	
WBL	1	1700	450	.26*	160	.09*
WBT	1	1700	60	.04	70	.04
WBR	1	1700	40	.02	90	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.88

11. Bake & Toledo

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	140	.08*	30	.02
NBT	3	5100	520	.11	1520	.39*
NBR	0	0	30		480	
SBL	1	1700	60	.04	140	.08*
SBT	3	5100	1820	.43*	1050	.21
SBR	0	0	350		20	
EBL	2	3400	40	.01*	350	.10
EBT	2	3400	50	.01	890	.26*
EBR	1	1700	20	.01	160	.09
WBL	1	1700	310	.18	60	.04*
WBT	2	3400	680	.22*	70	.04
WBR	0	0	80		120	.07
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .79 .82

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	100	.06*	10	.01
NBT	3	5100	690	.14	1690	.41*
NBR	0	0	40		380	
SBL	1	1700	110	.06	160	.09*
SBT	3	5100	1380	.32*	850	.18
SBR	0	0	260		50	
EBL	2	3400	20	.01	220	.06
EBT	2	3400	40	.01*	570	.17*
EBR	1	1700	20	.01	100	.06
WBL	1	1700	420	.25*	80	.05*
WBT	2	3400	560	.20	10	.01
WBR	0	0	110		180	.11
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .69 .77

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	100	.06*	10	.01
NBT	3	5100	750	.15	1740	.42*
NBR	0	0	40		380	
SBL	1	1700	110	.06	160	.09*
SBT	3	5100	1460	.34*	930	.19
SBR	0	0	260		50	
EBL	2	3400	20	.01	220	.06
EBT	2	3400	40	.01*	570	.17*
EBR	1	1700	20	.01	100	.06
WBL	1	1700	420	.25*	80	.05*
WBT	2	3400	560	.20	10	.01
WBR	0	0	110		180	.11
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .71 .78

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	40	.02*	10	.01
NBT	3	5100	1090	.22	2000	.49*
NBR	0	0	20		500	
SBL	1	1700	140	.08	120	.07*
SBT	3	5100	1530	.33*	1250	.25
SBR	0	0	130		30	
EBL	2	3400	10	.00	100	.03
EBT	2	3400	40	.01*	570	.17*
EBR	1	1700	20	.01	100	.06
WBL	1	1700	510	.30*	100	.06*
WBT	2	3400	540	.20	20	.01
WBR	0	0	130		200	.12
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .71 .84

002369

11. Bake & Toledo

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	40	.02*	10	.01
NBT	3	5100	1150	.23	2050	.50*
NBR	0	0	20		500	
SBL	1	1700	140	.08	120	.07*
SBT	3	5100	1610	.34*	1330	.27
SBR	0	0	130		30	
EBL	2	3400	10	.00	100	.03
EBT	2	3400	40	.01*	570	.17*
EBR	1	1700	20	.01	100	.06
WBL	1	1700	510	.30*	100	.06*
WBT	2	3400	540	.20	20	.01
WBR	0	0	130		200	.12
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .72 .85

002370

12. Alton & Jeronimo

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	50	.03*	10	.01
NBT	3	5100	1070	.21	1890	.37*
NBR	1	1700	360	.21	910	.54
SBL	2	3400	70	.02	100	.03*
SBT	3	5100	1390	.27*	1060	.21
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	1	1700	10	.01*	40	.02*
EBR	1	1700	10	.01	60	.04
WBL	2	3400	730	.21*	310	.09*
WBT	1	1700	80	.05	10	.01
WBR	1	1700	100	.06	50	.03
Right Turn Adjustment					NBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.57		.66

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	280	.16*	20	.01
NBT	3	5100	960	.19	1710	.34*
NBR	1	1700	380	.22	780	.46
SBL	2	3400	100	.03	110	.03*
SBT	3	5100	1440	.28*	1090	.22
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	1	1700	10	.01*	110	.06*
EBR	1	1700	20	.01	210	.12
WBL	2	3400	860	.25*	660	.19*
WBT	1	1700	70	.04	30	.02
WBR	1	1700	90	.05	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.67

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	280	.16*	20	.01
NBT	3	5100	1060	.21	1790	.35*
NBR	1	1700	380	.22	780	.46
SBL	2	3400	100	.03	110	.03*
SBT	3	5100	1570	.31*	1230	.24
SBR	0	0	10		10	
EBL	1	1700	10	.01	10	.01
EBT	1	1700	10	.01*	110	.06*
EBR	1	1700	20	.01	210	.12
WBL	2	3400	860	.25*	660	.19*
WBT	1	1700	70	.04	30	.02
WBR	1	1700	90	.05	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.68

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	230	.14*	10	.01
NBT	3	5100	1040	.20	1910	.37*
NBR	1	1700	560	.33	860	.51
SBL	2	3400	170	.05	220	.06*
SBT	3	5100	1870	.37*	1090	.22
SBR	0	0	20		10	
EBL	1	1700	10	.01	20	.01
EBT	1	1700	20	.01*	140	.08*
EBR	1	1700	10	.01	140	.08
WBL	2	3400	700	.21*	680	.20*
WBT	1	1700	110	.06	30	.02
WBR	1	1700	200	.12	130	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.76

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12. Alton & Jeronimo

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	230	.14*	10	.01
NBT	3	5100	1140	.22	1980	.39*
NBR	1	1700	560	.33	860	.51
SBL	2	3400	170	.05	220	.06*
SBT	3	5100	1990	.39*	1220	.24
SBR	0	0	20		10	
EBL	1	1700	10	.01	20	.01
EBT	1	1700	20	.01*	140	.08*
EBR	1	1700	10	.01	140	.08
WBL	2	3400	700	.21*	680	.20*
WBT	1	1700	110	.06	30	.02
WBR	1	1700	200	.12	130	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.78

002372

13. Bake & Jeronimo

Existing						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	1	1700	480 .28*	50 .03		
NBT	3	5100	630 .12	1920 .38*		
NBR	d	1700	60 .04	530 .31		
SBL	1	1700	60 .04	110 .06*		
SBT	3	5100	1970 .39*	1040 .20		
SBR	d	1700	190 .11	30 .02		
EBL	2	3400	10 .00	190 .06		
EBT	2	3400	50 .01	920 .27*		
EBR	1	1700	40 .02	390 .23		
WBL	1	1700	540 .32	130 .08*		
WBT	2	3400	1240 .39*	110 .05		
WBR	0	0	80	70		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			1.11	.84		

Interim year						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	2	3400	160 .05*	200 .06		
NBT	3	5100	600 .15	1340 .38*		
NBR	0	0	140	580		
SBL	1	1700	50 .03	10 .01*		
SBT	3	5100	1000 .20*	740 .15		
SBR	d	1700	110 .06	40 .02		
EBL	2	3400	50 .01	90 .03		
EBT	2	3400	290 .09*	400 .12*		
EBR	1	1700	450 .26	350 .21		
WBL	1	1700	280 .16*	240 .14*		
WBT	2	3400	480 .15	420 .14		
WBR	0	0	20	40		
Right Turn Adjustment		EBR	.13*			
Clearance Interval			.05*			.05*
TOTAL CAPACITY UTILIZATION			.68	.70		

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	2	3400	160 .05*	200 .06		
NBT	3	5100	660 .16	1390 .39*		
NBR	0	0	140	580		
SBL	1	1700	50 .03	10 .01*		
SBT	3	5100	1080 .21*	820 .16		
SBR	d	1700	110 .06	40 .02		
EBL	2	3400	50 .01	90 .03		
EBT	2	3400	290 .09*	400 .12*		
EBR	1	1700	450 .26	350 .21		
WBL	1	1700	280 .16*	240 .14*		
WBT	2	3400	480 .15	420 .14		
WBR	0	0	20	40		
Right Turn Adjustment		EBR	.13*			
Clearance Interval			.05*			.05*
TOTAL CAPACITY UTILIZATION			.69	.71		

Long range						
	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C		
NBL	2	3400	180 .05*	350 .10		
NBT	3	5100	920 .20	1530 .45*		
NBR	0	0	110	780 .46		
SBL	1	1700	80 .05	30 .02*		
SBT	3	5100	1120 .22*	1030 .20		
SBR	d	1700	160 .09	70 .04		
EBL	2	3400	70 .02	160 .05		
EBT	2	3400	440 .13*	350 .10*		
EBR	1	1700	480 .28	500 .29		
WBL	1	1700	560 .33*	260 .15*		
WBT	2	3400	350 .11	530 .17		
WBR	0	0	20	60		
Right Turn Adjustment		EBR	.11*			
Clearance Interval			.05*			.05*
TOTAL CAPACITY UTILIZATION			.89	.77		

13. Bake & Jeronimo

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	180	.05*	350	.10
NBT	3	5100	980	.21	1580	.46*
NBR	0	0	110		780	
SBL	1	1700	80	.05	30	.02*
SBT	3	5100	1200	.24*	1110	.22
SBR	d	1700	160	.09	70	.04
EBL	2	3400	70	.02	160	.05
EBT	2	3400	440	.13*	350	.10*
EBR	1	1700	480	.28	500	.29
WBL	1	1700	560	.33*	260	.15*
WBT	2	3400	350	.11	530	.17
WBR	0	0	20		60	
Right Turn Adjustment			EBR	.11*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .91 .78

Long range with Project (Buildout) w/mitigation

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	180	.05*	350	.10
NBT	3	5100	980	.21	1580	.46*
NBR	0	0	110		780	
SBL	1	1700	80	.05	30	.02*
SBT	3	5100	1200	.24*	1110	.22
SBR	d	1700	160	.09	70	.04
EBL	2	3400	70	.02	160	.05
EBT	2	3400	440	.13*	350	.10*
EBR	1	1700	480	.28	500	.29
WBL	1	1700	560	.33*	260	.15*
WBT	2	3400	350	.11	530	.17
WBR	0	0	20		60	
Right Turn Adjustment			EBR	.10*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION .90 .78

002374

14. Alton & Muirlands/Barranca

Existing

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	10	.01*	20	.01
NBT	3	5100	1140	.22	1540	.30*
NBR	f		230		1120	
SBL	2	3400	70	.02	190	.06*
SBT	3	5100	1600	.31*	790	.15
SBR	1	1700	670	.39	330	.19
EBL	2	3400	340	.10*	990	.29*
EBT	2	3400	170	.05	1010	.30
EBR	0	0	10		10	
WBL	2	3400	470	.14	170	.05
WBT	2	3400	660	.21*	180	.07*
WBR	0	0	60		60	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .68 .77

Interim year

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	10	.01*	10	.01
NBT	3	5100	1180	.23	1710	.34*
NBR	f		450		1040	
SBL	2	3400	290	.09	120	.04*
SBT	3	5100	1810	.35*	1020	.20
SBR	1	1700	760	.45	230	.14
EBL	2	3400	400	.12*	840	.25
EBT	2	3400	160	.05	870	.26*
EBR	0	0	10		10	
WBL	2	3400	660	.19	410	.12*
WBT	2	3400	1050	.34*	10	.01
WBR	0	0	100		90	.05
Right Turn Adjustment			SBR	.01*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .88 .81

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	10	.01*	10	.01
NBT	3	5100	1280	.25	1790	.35*
NBR	f		450		1040	
SBL	2	3400	290	.09	120	.04*
SBT	3	5100	1940	.38*	1160	.23
SBR	1	1700	760	.45	230	.14
EBL	2	3400	400	.12*	840	.25
EBT	2	3400	160	.05	870	.26*
EBR	0	0	10		10	
WBL	2	3400	660	.19	410	.12*
WBT	2	3400	1050	.34*	10	.01
WBR	0	0	100		90	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .90 .82

Long range

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	10	.01*	10	.01
NBT	3	5100	1230	.24	2020	.40*
NBR	f		420		420	
SBL	2	3400	300	.09	210	.06*
SBT	3	5100	1890	.37*	1220	.24
SBR	f		760		340	
EBL	2	3400	500	.15*	870	.26
EBT	2	3400	230	.07	590	.18*
EBR	0	0	10		10	
WBL	2	3400	280	.08	360	.11*
WBT	2	3400	890	.26*	20	.01
WBR	1	1700	120	.07	80	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .84 .80

14. Alton & Muirlands/Barranca

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	1	1700	10	.01*	10	.01
NBT	3	5100	1330	.26	2090	.41*
NBR	f		420		420	
SBL	2	3400	300	.09	210	.06*
SBT	3	5100	2010	.39*	1350	.26
SBR	f		760		340	
EBL	2	3400	500	.15*	870	.26
EBT	2	3400	230	.07	590	.18*
EBR	0	0	10		10	
WBL	2	3400	280	.08	360	.11*
WBT	2	3400	890	.26*	20	.01
WBR	1	1700	120	.07	80	.05
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION

.86

.81

002376

15. Bake & Muirlands

Existing

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	210 .06*	70 .02
NBT	4	6800	1010 .15	1960 .29*
NBR	f		110	560
SBL	2	3400	50 .01	280 .08*
SBT	4	6800	2290 .34*	1260 .19
SBR	f		340	60
EBL	2	3400	80 .02*	590 .17
EBT	2	3400	120 .04	1440 .42*
EBR	f		90	360
WBL	2	3400	460 .14	110 .03*
WBT	2	3400	980 .29*	160 .05
WBR	f		220	150
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .76 .87

Interim year

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	590 .17*	290 .09
NBT	4	6800	340 .05	1120 .16*
NBR	f		30	520
SBL	2	3400	340 .10	260 .08*
SBT	4	6800	420 .06*	730 .11
SBR	f		690	140
EBL	1	1700	60 .04	500 .29
EBT	2	3400	520 .15*	1150 .34*
EBR	f		100	560
WBL	2	3400	850 .25*	460 .14*
WBT	2	3400	1070 .31	440 .13
WBR	1	1700	200 .12	210 .12
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .68 .77

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	590 .17*	290 .09
NBT	4	6800	400 .06	1170 .17*
NBR	f		30	520
SBL	2	3400	340 .10	260 .08*
SBT	4	6800	500 .07*	810 .12
SBR	f		690	140
EBL	1	1700	60 .04	500 .29
EBT	2	3400	520 .15*	1150 .34*
EBR	f		100	560
WBL	2	3400	850 .25*	460 .14*
WBT	2	3400	1070 .31	440 .13
WBR	1	1700	200 .12	210 .12
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .69 .78

Long range

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	360 .11*	310 .09
NBT	4	6800	560 .08	1250 .18*
NBR	f		10	910
SBL	2	3400	260 .08	320 .09*
SBT	4	6800	760 .11*	1020 .15
SBR	f		800	170
EBL	2	3400	70 .02	660 .19
EBT	2	3400	480 .14*	820 .24*
EBR	f		130	410
WBL	2	3400	1260 .37*	460 .14*
WBT	2	3400	840 .25	400 .12
WBR	1	1700	350 .21	340 .20
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .78 .70

15. Bake & Muirlands

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	360	.11*	310	.09
NBT	4	6800	620	.09	1300	.19*
NBR	f		10		910	
SBL	2	3400	260	.08	320	.09*
SBT	4	6800	840	.12*	1100	.16
SBR	f		800		170	
EBL	2	3400	70	.02	660	.19
EBT	2	3400	480	.14*	820	.24*
EBR	f		130		410	
WBL	2	3400	1260	.37*	460	.14*
WBT	2	3400	840	.25	400	.12
WBR	1	1700	350	.21	340	.20
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.71

002378

16. Alton & Rockfield

Long range						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1610	.32	2580	.51*
NBR	1	1700	170	.10	1240	.73
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	2410	.47*	1530	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	1130	.33*	220	.06*
WBT	0	0	0		0	
WBR	1	1700	10	.01	10	.01
Right Turn Adjustment					NBR	.18*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION				.85	.81	

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1710	.34	2650	.52*
NBR	1	1700	170	.10	1240	.73
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	2530	.50*	1660	.33
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	1130	.33*	220	.06*
WBT	0	0	0		0	
WBR	1	1700	10	.01	10	.01
Right Turn Adjustment					NBR	.17*
Clearance Interval						.05*
TOTAL CAPACITY UTILIZATION				.88	.81	

17. Bake & Rockfield

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	160	.05*	20	.01
NBT	4	6800	1060	.16	2060	.30*
NBR	f		590		1070	
SBL	2	3400	230	.07	580	.17*
SBT	4	6800	2540	.37*	1180	.17
SBR	1	1700	10	.01	10	.01
EBL	1	1700	10	.01	50	.03
EBT	2	3400	30	.01*	240	.07*
EBR	f		20		140	
WBL	2	3400	690	.20*	600	.18*
WBT	2	3400	150	.04	100	.03
WBR	f		300		270	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .68 .77

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	10	.00
NBT	4	6800	910	.13	2030	.30*
NBR	f		590		1070	
SBL	2	3400	150	.04	220	.06*
SBT	4	6800	1540	.23*	1530	.23
SBR	1	1700	10	.01	10	.01
EBL	1	1700	10	.01	10	.01
EBT	2	3400	20	.01*	20	.01*
EBR	f		10		10	
WBL	2	3400	870	.26*	820	.24*
WBT	2	3400	20	.01	20	.01
WBR	f		40		300	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .55 .66

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	10	.00
NBT	4	6800	970	.14	2080	.31*
NBR	f		590		1070	
SBL	2	3400	150	.04	220	.06*
SBT	4	6800	1620	.24*	1610	.24
SBR	1	1700	10	.01	10	.01
EBL	1	1700	10	.01	10	.01
EBT	2	3400	20	.01*	20	.01*
EBR	f		10		10	
WBL	2	3400	870	.26*	820	.24*
WBT	2	3400	20	.01	20	.01
WBR	f		40		300	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .56 .67

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	520	.15*	100	.03
NBT	4	6800	920	.14	2430	.36*
NBR	f		520		460	
SBL	2	3400	110	.03	70	.02*
SBT	4	6800	2350	.35*	1850	.27
SBR	1	1700	10	.01	10	.01
EBL	1	1700	10	.01*	20	.01
EBT	2	3400	60	.02	720	.21*
EBR	f		70		370	
WBL	2	3400	100	.03	550	.16*
WBT	2	3400	540	.16*	70	.02
WBR	f		10		200	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .72 .80

002380

17. Bake & Rockfield

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	520	.15*	100	.03
NBT	4	6800	980	.14	2480	.36*
NBR	f		520		460	
SBL	2	3400	110	.03	70	.02*
SBT	4	6800	2430	.36*	1930	.28
SBR	1	1700	10	.01	10	.01
EBL	1	1700	10	.01*	20	.01
EBT	2	3400	60	.02	720	.21*
EBR	f		70		370	
WBL	2	3400	100	.03	550	.16*
WBT	2	3400	540	.16*	70	.02
WBR	f		10		200	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION			.73		.80	

18. Barranca & Irvine Center

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	10	.00	10	.00
NBT	2	3400	670	.20	810	.24*
NBR	1	1700	60	.04	70	.04
SBL	2	3400	20	.01	90	.03*
SBT	2	3400	1150	.34*	790	.23
SBR	1	1700	290	.17	220	.13
EBL	2	3400	130	.04*	360	.11*
EBT	3	5100	160	.03	440	.09
EBR	1	1700	20	.01	10	.01
WBL	2	3400	130	.04	50	.01
WBT	4	6800	560	.09*	390	.06*
WBR	0	0	60		50	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.49

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	190	.06*	60	.02*
NBT	3	5100	560	.11	200	.04
NBR	1	1700	30	.02	410	.24
SBL	2	3400	50	.01	130	.04
SBT	3	5100	660	.13*	460	.09*
SBR	1	1700	330	.19	280	.16
EBL	2	3400	410	.12*	870	.26*
EBT	4	6800	230	.04	1250	.20
EBR	0	0	30		120	
WBL	2	3400	890	.26	200	.06
WBT	4	6800	2130	.32*	320	.05*
WBR	0	0	70		30	
Right Turn Adjustment					NBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.56

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	190	.06*	60	.02*
NBT	3	5100	560	.11	200	.04
NBR	1	1700	30	.02	410	.24
SBL	2	3400	50	.01	130	.04
SBT	3	5100	660	.13*	460	.09*
SBR	1	1700	330	.19	280	.16
EBL	2	3400	410	.12*	870	.26*
EBT	4	6800	240	.04	1260	.20
EBR	0	0	30		120	
WBL	2	3400	890	.26	200	.06
WBT	4	6800	2140	.33*	330	.05*
WBR	0	0	70		30	
Right Turn Adjustment					NBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.56

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	280	.08*	100	.03
NBT	3	5100	360	.07	290	.06*
NBR	1	1700	70	.04	470	.28
SBL	2	3400	250	.07	190	.06*
SBT	3	5100	340	.07*	180	.04
SBR	1	1700	470	.28	390	.23
EBL	2	3400	310	.09*	620	.18*
EBT	4	6800	700	.10	1800	.26
EBR	1	1700	140	.08	400	.24
WBL	2	3400	500	.15	140	.04
WBT	4	6800	1840	.27*	880	.13*
WBR	1	1700	120	.07	190	.11
Right Turn Adjustment			SBR	.14*	Multi	.19*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.67

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18. Barranca & Irvine Center

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	280	.08*	100	.03
NBT	3	5100	360	.07	290	.06*
NBR	1	1700	70	.04	470	.28
SBL	2	3400	250	.07	190	.06*
SBT	3	5100	340	.07*	180	.04
SBR	1	1700	470	.28	390	.23
EBL	2	3400	310	.09*	620	.18*
EBT	4	6800	710	.10	1810	.27
EBR	1	1700	140	.08	400	.24
WBL	2	3400	500	.15	140	.04
WBT	4	6800	1850	.27*	890	.13*
WBR	1	1700	120	.07	190	.11
Right Turn Adjustment			SBR	.14*	Multi	.20*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.68

19. Irvine Center & Alton

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	870	.26*	100	.03*
NBT	3	5100	600	.12	300	.06
NBR	1	1700	1060	.62	580	.34
SBL	2	3400	70	.02	180	.05
SBT	3	5100	190	.04*	650	.13*
SBR	1	1700	10	.01	40	.02
EBL	2	3400	20	.01*	20	.01
EBT	3	5100	330	.06	1230	.24*
EBR	1	1700	30	.02	700	.41
WBL	2	3400	200	.06	700	.21*
WBT	3	5100	1340	.26*	540	.11
WBR	1	1700	90	.05	80	.05
Right Turn Adjustment Clearance Interval			NBR	.18*	Multi	.22*
				.05*		.05*

TOTAL CAPACITY UTILIZATION .80 .88

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	110	.03	280	.08
NBT	3	5100	1370	.27*	390	.08*
NBR	1	1700	600	.35	330	.19
SBL	2	3400	140	.04*	460	.14*
SBT	3	5100	180	.04	230	.05
SBR	1	1700	10	.01	10	.01
EBL	2	3400	50	.01*	10	.00
EBT	3	5100	510	.10	1700	.33*
EBR	1	1700	100	.06	1010	.59
WBL	2	3400	400	.12	530	.16*
WBT	3	5100	1230	.24*	650	.13
WBR	1	1700	620	.36	240	.14
Right Turn Adjustment Clearance Interval			WBR	.09*	EBR	.13*
				.05*		.05*

TOTAL CAPACITY UTILIZATION .70 .89

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	110	.03	280	.08
NBT	3	5100	1370	.27*	390	.08*
NBR	1	1700	600	.35	330	.19
SBL	2	3400	150	.04*	470	.14*
SBT	3	5100	180	.04	230	.05
SBR	1	1700	10	.01	10	.01
EBL	2	3400	50	.01*	10	.00
EBT	3	5100	520	.10	1710	.34*
EBR	1	1700	100	.06	1010	.59
WBL	2	3400	400	.12	530	.16*
WBT	3	5100	1240	.24*	660	.13
WBR	1	1700	630	.37	250	.15
Right Turn Adjustment Clearance Interval			WBR	.10*	EBR	.12*
				.05*		.05*

TOTAL CAPACITY UTILIZATION .71 .89

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	20	.01	60	.02
NBT	3	5100	1530	.30*	940	.18*
NBR	f		550		1120	
SBL	2	3400	240	.07*	360	.11*
SBT	3	5100	360	.07	800	.16
SBR	1	1700	200	.12	210	.12
EBL	2	3400	130	.04	150	.04
EBT	3	5100	420	.08*	1170	.23*
EBR	1	1700	200	.12	650	.38
WBL	2	3400	640	.19*	620	.18*
WBT	3	5100	970	.19	760	.15
WBR	1	1700	630	.37	480	.28
Right Turn Adjustment Clearance Interval			WBR	.09*	EBR	.05*
				.05*		.05*

TOTAL CAPACITY UTILIZATION .78 .80

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19. Irvine Center & Alton

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	2	3400	20	.01	60	.02
NBT	3	5100	1530	.30*	940	.18*
NBR	f		550		1120	
SBL	2	3400	250	.07*	370	.11*
SBT	3	5100	360	.07	800	.16
SBR	1	1700	200	.12	210	.12
EBL	2	3400	130	.04	150	.04
EBT	3	5100	430	.08*	1180	.23*
EBR	1	1700	200	.12	650	.38
WBL	2	3400	640	.19*	620	.18*
WBT	3	5100	980	.19	770	.15
WBR	1	1700	640	.38	490	.29
Right Turn Adjustment			WBR	.10*	EBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.80

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20. I-5 NB Ramps & Alton

Existing

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	330	.10*	80	.02*
NBT	0	0	0		0	
NBR	1	1700	330	.19	80	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	2030	.40*	2300	.45*
EBR	f		200		470	
WBL	0	0	0		0	
WBT	3	5100	1110	.22	1270	.25
WBR	f		430		1090	
Right Turn Adjustment			NBR	.09*	NBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.55

Interim year

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	640	.19*	10	.00
NBT	0	0	0		0	
NBR	f		100		60	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	2710	.53*
EBR	f		80		90	
WBL	0	0	0		0	
WBT	3	5100	1630	.32	1250	.25
WBR	f		830		1260	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.58		.58

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	640	.19*	10	.00
NBT	0	0	0		0	
NBR	f		100		60	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1830	.36*	2790	.55*
EBR	f		80		90	
WBL	0	0	0		0	
WBT	3	5100	1650	.32	1280	.25
WBR	f		940		1380	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.60

Long range

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	770	.23*	250	.07*
NBT	0	0	0		0	
NBR	f		30		20	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	2170	.43*	3610	.71*
EBR	f		320		710	
WBL	0	0	0		0	
WBT	3	5100	2080	.41	1630	.32
WBR	f		1150		1020	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.83

20. I-5 NB Ramps & Alton

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	770	.23*	250	.07*
NBT	0	0	0		0	
NBR	f		30		20	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	2270	.45*	3680	.72*
EBR	f		320		710	
WBL	0	0	0		0	
WBT	3	5100	2100	.41	1660	.33
WBR	f		1250		1130	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .73 .84

21. Enterprise & Alton

Existing

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	70 .02*	200 .06*
NBT	0	0	0	0
NBR	2	3400	1020 .30	870 .26
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	3	5100	1360 .27	2220 .44*
EBR	1	1700	20 .01	80 .05
WBL	1	1700	90 .05	220 .13*
WBT	3	5100	1660 .33*	1390 .27
WBR	0	0	0	0
Right Turn Adjustment			NBR .24*	NBR .10*
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .64 .78

Interim year

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	160 .05*	300 .09*
NBT	0	0	0	0
NBR	2	3400	850 .25	570 .17
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	3	5100	960 .19	2230 .44*
EBR	1	1700	70 .04	710 .42
WBL	1	1700	80 .05	230 .14*
WBT	3	5100	2190 .43*	1030 .20
WBR	0	0	0	0
Right Turn Adjustment			NBR .02*	
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .55 .72

Interim year with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	160 .05*	300 .09*
NBT	0	0	0	0
NBR	2	3400	940 .28	630 .19
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	3	5100	980 .19	2240 .44*
EBR	1	1700	70 .04	710 .42
WBL	1	1700	80 .05	230 .14*
WBT	3	5100	2210 .43*	1060 .21
WBR	0	0	0	0
Right Turn Adjustment			NBR .05*	
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .58 .72

Long range

	LANES	CAPACITY	AM PK HOUR VOL V/C	PM PK HOUR VOL V/C
NBL	2	3400	60 .02*	350 .10*
NBT	0	0	0	0
NBR	f		1470	1670
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	3	5100	1020 .20	2650 .52*
EBR	1	1700	40 .02	460 .27
WBL	2	3400	380 .11	680 .20*
WBT	3	5100	2470 .48*	1200 .24
WBR	0	0	0	0
Clearance Interval			.05*	.05*

TOTAL CAPACITY UTILIZATION .55 .87

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21. Enterprise & Alton

Long range with Project (Buildout)

	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3400	60	.02*	350	.10*
NBT	0	0	0		0	
NBR	f		1550		1730	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1040	.20	2660	.52*
EBR	1	1700	40	.02	460	.27
WBL	2	3400	380	.11	680	.20*
WBT	3	5100	2490	.49*	1230	.24
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .56 .87

22. Bake & I-5 NB Ramps

Interim year						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1270	.30*	2940	.58*
NBR	0	0	270		10	
SBL	0	0	0		0	
SBT	3	5100	150	.03	530	.10
SBR	f		2270		1830	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	10	.00	10	.00
WBT	0	0	0		0	
WBR	f		240		170	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.35		.63

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1320	.31*	2980	.59*
NBR	0	0	270		10	
SBL	0	0	0		0	
SBT	3	5100	180	.04	560	.11
SBR	f		2320		1890	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	10	.00	10	.00
WBT	0	0	0		0	
WBR	f		260		180	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.36		.64

Long range						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	760	.22*	1850	.53*
NBR	0	0	1260	.74	840	
SBL	0	0	0		0	
SBT	3	5100	740	.15	1400	.27
SBR	f		1780		1370	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	460	.14*	100	.03*
WBT	0	0	0		0	
WBR	f		1210		1130	
Right Turn Adjustment			NBR	.42*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.61

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	800	.24*	1880	.53*
NBR	0	0	1260	.74	840	
SBL	0	0	0		0	
SBT	3	5100	770	.15	1430	.28
SBR	f		1830		1420	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	460	.14*	100	.03*
WBT	0	0	0		0	
WBR	f		1230		1150	
Right Turn Adjustment			NBR	.40*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.61

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23. Bake & I-5 SB Off-Ramp

Interim year						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	570	.11*	230	.05
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	180	.04	420	.08*
SBR	0	0	0		0	
EBL	2.5		1200	.24*	3160	.62*
EBT	0	6800	0		0	
EBR	1.5		10		80	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.75

Interim year with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	580	.11*	230	.05
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	190	.04	430	.09*
SBR	0	0	20		20	
EBL	2.5		1240	.24*	3190	.63*
EBT	0	6800	0		0	
EBR	1.5		10		80	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.77

Long range						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1350	.26*	2100	.41*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	1300	.25	1170	.23
SBR	0	0	0		0	
EBL	2.5		900	{.23}*	1190	{.29}*
EBT	0	6800	0	.23	0	{.29}
EBR	1.5		680		1030	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.54		.75

Long range with Project (Buildout)						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1350	.26	2100	.41*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	1300	.26*	1170	.24
SBR	0	0	30		30	
EBL	2.5		940	{.24}*	1220	{.30}*
EBT	0	6800	0	.24	0	{.30}
EBR	1.5		680		1030	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.55		.76

APPENDIX B
PEAK HOUR LINK CAPACITY ANALYSIS

PEAK HOUR LINK CAPACITY CALCULATION WORKSHEET						
Description: Long-Range					Link V/C: .96	
Link: Alton n/o Muirlands						
Peak Hour Midblock Volume (Underline either Eastbound/Westbound or Northbound/Southbound)				AM	PM	
		Eastbound or <u>Northbound</u>		1,850	2,970	
		Westbound or <u>Southbound</u>		2,950	1,910	
		Peak Hour Volume Total		4,800	4,880	
Link Intersections: Include each adjacent intersection at ends of link.			Intersection ICU			
			Total ICU		Thru V/C	
			AM	PM	AM	PM
Int#12	Alton	at Jeronimo	.78	.76	.37	.37
Int#14	Alton	at Muirlands	.84	.80	.37	.40
Sum of both intersections =			1.62	1.56	.74	.77
Calculate Green Time: Through V/C / Total ICU =			.46	.49		
Calculate Peak Hour Link Capacity (PHLC)			AM Peak		PM Peak	
Number of Lanes (NL)			6		6	
Unconstrained Capacity (UC) x			1,600		1,600	
Green Time (GT) (From Above) x			.46		.49	
Adjustment Factor (AF) x			1.00		1.00	
Peak Hour Link Capacity (PHLC) =			4,416		4,704	
Peak Hour Volume (From Above) =			4,800		4,880	
Peak Hour V/C =			1.09		1.04	
Notes:						

PEAK HOUR LINK CAPACITY CALCULATION WORKSHEET						
Description: Long-Range With Project					Link V/C: 1.00	
Link: Alton n/o Muirlands						
Peak Hour Midblock Volume (Underline either Eastbound/Westbound or Northbound/Southbound)				AM	PM	
		Eastbound or <u>Northbound</u>		1.950	3.040	
		Westbound or <u>Southbound</u>		3.070	2.040	
		Peak Hour Volume Total		5.020	5.080	
Link Intersections: Include each adjacent intersection at ends of link.			Intersection ICU			
			Total ICU		Thru V/C	
			AM	PM	AM	PM
Int#12	Alton at Jeronimo		.80	.78	.39	.39
Int#14	Alton at Muirlands		.86	.81	.39	.41
Sum of both intersections =			1.66	1.59	.78	.80
Calculate Green Time: Through V/C / Total ICU =			.47	.50		
Calculate Peak Hour Link Capacity (PHLC)			AM Peak		PM Peak	
Number of Lanes (NL)			6		6	
Unconstrained Capacity (UC) x			1.600		1.600	
Green Time (GT) (From Above) x			.47		.50	
Adjustment Factor (AF) x			1.00		1.00	
Peak Hour Link Capacity (PHLC) =			4.512		4.800	
Peak Hour Volume (From Above) =			5.020		5.080	
Peak Hour V/C =			1.11		1.06	
Notes:						

PEAK HOUR LINK CAPACITY CALCULATION WORKSHEET							
Description: Long-Range					Link V/C: 1.04		
Link: Alton s/o Rockfield							
Peak Hour Midblock Volume (<u>Underline</u> either Eastbound/Westbound or Northbound/Southbound)				AM	PM		
		<u>Eastbound</u> or Northbound		1,780	3,820		
		<u>Westbound</u> or Southbound		3,540	1,750		
		Peak Hour Volume Total		5,320	5,570		
Link Intersections: Include each adjacent intersection at ends of link.				Intersection ICU			
				Total ICU		Thru V/C	
				AM	PM	AM	PM
Int#20	I-5 NB at Alton			.71	.83	.43	.71
Int#16	Alton at Rockfield			.85	.81	.47	.51
Sum of both intersections =				1.56	1.64	.90	1.22
Calculate Green Time: Through V/C / Total ICU =				.58	.74		
Calculate Peak Hour Link Capacity (PHLC)				AM Peak		PM Peak	
Number of Lanes (NL)				6		6	
Unconstrained Capacity (UC) x				1,600		1,600	
Green Time (GT) (From Above) x				.58		.74	
Adjustment Factor (AF) x				1.00		1.00	
Peak Hour Link Capacity (PHLC) =				5,568		7,104	
Peak Hour Volume (From Above) =				5,320		5,570	
Peak Hour V/C =				.96		.78	
Notes:							

PEAK HOUR LINK CAPACITY CALCULATION WORKSHEET						
Description: Long-Range With Project					Link V/C: 1.07	
Link: Alton s/o Rockfield						
Peak Hour Midblock Volume (Underline either Eastbound/Westbound or Northbound/Southbound)					AM	PM
			<u>Eastbound</u> or Northbound		1,880	3,890
			<u>Westbound</u> or Southbound		3,660	1,880
			Peak Hour Volume Total		5,540	5,770
Link Intersections: Include each adjacent intersection at ends of link.			Intersection ICU			
			Total ICU		Thru V/C	
			AM	PM	AM	PM
Int#20	I-5 NB	at Alton	.73	.84	.45	.72
Int#16	Alton	at Rockfield	.88	.81	.50	.52
Sum of both intersections =			1.61	1.65	.95	1.24
Calculate Green Time: Through V/C / Total ICU =			.59	.75		
Calculate Peak Hour Link Capacity (PHLC)			AM Peak		PM Peak	
Number of Lanes (NL)			6		6	
Unconstrained Capacity (UC) x			1,600		1,600	
Green Time (GT) (From Above) x			.59		.75	
Adjustment Factor (AF) x			1.00		1.00	
Peak Hour Link Capacity (PHLC) =			5,664		7,200	
Peak Hour Volume (From Above) =			5,540		5,770	
Peak Hour V/C =			.98		.80	
Notes:						